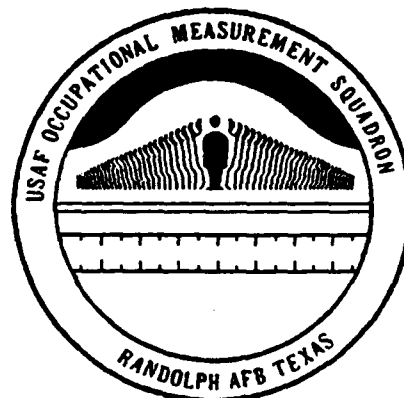




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**UNITED STATES
AIR FORCE**

OCCUPATIONAL SURVEY REPORT

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BIOENVIRONMENTAL ENGINEER UTILIZATION FIELD

AFSC 9121, 9126

AFPT 90-912-958

JULY 1993

93-21744



**OCCUPATIONAL ANALYSIS PROGRAM
USAF OCCUPATIONAL MEASUREMENT SQUADRON
AIR EDUCATION and TRAINING COMMAND
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PREFACE

This report presents the results of a detailed Air Force Occupational Survey of the Bioenvironmental Engineer utilization field (AFSC 912X). This project was requested by USAFSAM/ED to gather data that would help to: 1) evaluate and update training requirements, 2) identify job structure, and 3) investigate officer retention and other career progression issues. Authority for conducting occupational surveys is contained in AFR 35-2. Computer products upon which this report is based are available for use by operations and training officials.

The survey instrument was developed by Captain Lisa A. Boyce. Capt Boyce and Ms Lauri Odness analyzed the data and wrote the final report. Computer support for this project was provided by MSgt Cornelia J. Wharton. Administrative support was provided by Ms Linda McDonald. This report has been reviewed and approved for release by Mr Gerald R. Clow, Chief, Management Applications Flight, Occupational Analysis Program, USAF Occupational Measurement Squadron (USAFOMS).

Copies of this Occupational Survey Report (OSR) are distributed to Air Staff sections, major commands, and other interested training management personnel (see distribution on page i). Additional copies and computer printouts from which this report was produced are available upon request to the USAF Occupational Measurement Squadron, Attention: Chief, Occupational Analysis Flight (OMY), Randolph AFB, Texas 78150-4449.

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SUMMARY OF RESULTS

1. Survey Coverage: Survey results are based on responses from 202 Bioenvironmental Engineers (AFSC 912X). This represents 66 percent of all survey eligible 912X officers. Incumbents were surveyed across various major commands and include A, B, and D-shred personnel, representative of all paygrades.
2. Career Ladder Structure: Twelve jobs are identified in the 912X specialty, which accounted for 71 percent of the survey sample. The remaining 29 percent performed numerous tasks that were not grouped with the defined jobs. Several of these ungrouped respondents indicated they were in highly specialized one-of-a-kind positions.
3. AFR 36-1 Specialty Descriptions: The descriptions in AFR 36-1 for the 912X Bioenvironmental Engineers utilization field provide a broad and accurate overview of the tasks and duties performed. However, two duties, relating to bioenvironmental engineering in a medical facility were not covered in the job inventory and were not included in this analysis.
4. Training Analysis: A review of the 912X training documents reveals several areas are not supported by survey data. Specifically, 113 CTS line elements out of 237 are in need of review for deletion or changes in proficiency codes. Numerous CTS performance and knowledge items are not referred to the POI, while several tasks with sufficient members performing are not matched to any item. Survey data suggest that a review of the CTS and POI is necessary to rectify these discrepancies.
5. Job Satisfaction: Overall, respondents are generally satisfied with their jobs. Job satisfaction indicators are similar to slightly higher when compared with other Medical personnel. Job interest and sense of accomplishment are rated slightly higher than utilization of training and utilization of talents for each 912X shred surveyed as well as for the specialty jobs.
6. MAJCOM Analysis: Analysis reflected no unexpected difference between the MAJCOMs. The primary concentration of bioenvironmental engineers (BEE) was found in Air Force Logistics Command and Air Force Space Command. Incumbents in all but five of the MAJCOMs spend most of their time performing industrial hygiene related tasks.
7. Implications: The 36-1 adequately reflects the 912X utilization field. Analysis showed significant discrepancies in the training documents used for the 912X officer. Both the CTS and POI contained elements that were not supported by survey data. Several high performance tasks were not referenced to CTS elements, while some CTS elements need changes in the proficiency codes to reflect the level that the tasks are taught. The POI needs review so that it reflects tasks taught at the knowledge and performance level.

**OCCUPATIONAL SURVEY REPORT (OSR)
BIOENVIRONMENTAL ENGINEER UTILIZATION FIELD
(AFSC 912X)**

INTRODUCTION

This is a report of an occupational survey of personnel in the Bioenvironmental Engineer (BEE) utilization field completed by the Occupational Analysis Program, USAF Occupational Measurement Squadron, in April 1993. This is the first occupational survey for the Bioenvironmental Engineer officer specialty. This survey was requested by the Chief, Education Division, Brooks AFB TX (USAFSAM/ED). The primary purpose of this OSR was to provide current data to assist training managers with evaluation of training requirements. A second purpose was to review the utilization field job descriptions, including identifying AFSC 912X job structure and career progression. Finally, the resulting data should serve as a basis for developing methods of managing the BEE Officer resource more effectively.

Background

According to AFR 36-1 Specialty Descriptions for AFSC 912X, dated 31 October 1990, BEE Officers apply engineering and biological knowledge and techniques for health protection purposes; participate in development of procedures, techniques, and equipment; conduct or supervise engineering services; and participate in medical facility programs. There are seven shreds relating to specific portions of the specialty:

- A. . . General
- B. . . Industrial Hygiene
- C. . . Medical Construction
- D. . . Environmental
- E. . . Architecture
- F. . . Biomedical
- H. . . Bioenvironmental/Health Physics

Academic prerequisites vary depending upon the specialty shredout. Normally, a bachelor of science in an engineering discipline is mandatory. Completion of the BEE Course (B3OBY9121-000) is mandatory, except for C and E shreds, in which case it is desirable. A secret clearance is required by the ninth week of this 15-week basic course. The Bioenvironmental course is located at the USAF School of Aerospace Medicine (SAM), Brooks

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AFB TX, and graduates approximately 48 officers per year. The elimination rate is scheduled for 1 percent. The student flow for FY92 was 43, with 100 percent graduating. The projected student flow for FY93 is 48 officers.

Of the seven 912X shreds, A-General, B-Industrial Hygiene, and D-Environmental were identified to be surveyed. Officers holding these three shreds encompass over 90 percent of the utilization field population and, according to AFR 50-5, are required to attend the basic BEE course.

SURVEY METHODOLOGY

Inventory Development

The data collection instrument for this occupational survey was USAF Job Inventory AFPT 90-912-958 dated February 1991. A preliminary task list was prepared by the inventory developer after carefully reviewing relevant task lists, current utilization field publications, training documents, and directives to determine the appropriateness of each task. This tentative task list was refined and validated in the field through personal interviews with 62 subject-matter experts representing 13 operational bases. To ensure full coverage of the variety of tasks performed by utilization field members, representative bases, as well as bases with unique missions, were identified by the USAFSAM personnel. Operational units at the following bases were visited:

BASE

Bolling AFB DC
Brooks AFB TX
Edwards AFB CA
Eglin AFB FL
Griffiss AFB NY
Hill AFB UT
Kelly AFB TX
Kirtland AFB NM
Nellis AFB NV
Randolph AFB TX
Sheppard AFB TX
Tyndall AFB FL

Wright Patterson AFB OH

RATIONALE FOR VISIT

HQ AF/SGPA
USAFSAM, AFCEE, AL/OE
AFSC -- test and evaluation center
AFSC -- research and development labs
SAC -- readiness and experience
AFLC -- Phoenix system
SA-ALC
MAC -- large radiation labs
TAC -- representative base
ATC/SGPB
ATC -- representative base
AFESC -- research and development function
AFLC/SGB, ASD/SEH
AFSC -- research and development function

Other significant contacts with personnel having utilization field involvement included classification, training, resource, and functional managers, and the Headquarters Human Systems Division Training Staff Officer.

This process resulted in a final job inventory containing 1,038 tasks organized under 14 duty headings. Also included was a background section requesting such information as grade, time in service, job satisfaction, retention intentions, work area, position title, and support equipment used or operated.

Survey Administration

From April 1992 through August 1992, Military Personnel Flight Offices at operational bases worldwide administered the inventory to all eligible DAFSC 912XA/B/D personnel. Members eligible for the survey consisted of the total assigned population, excluding the following: (1) hospitalized personnel, (2) members in transition for a permanent change of station, (3) members retiring during the time inventories were administered to the field, and (4) members in the job less than 6 weeks. Participants were selected from a computer-generated mailing list obtained from personnel data tapes maintained by Armstrong Laboratory (AL).

Each individual who filled out an inventory booklet first completed an identification and biographical information section and then checked each task performed in their current job. Next, members rated these tasks on a 9 point scale showing relative time spent on each task as compared to all other tasks checked. Ratings ranged from 1 (very small amount of time spent) to 9 (very large amount of time spent).

To determine relative percent time spent for each task checked by a respondent, all of the incumbent's ratings are assumed to account for 100 percent of his or her time spent on the job. The rating for each task is divided by the sum of all the ratings, then multiplied by 100 to provide a relative percentage of time for each task. This procedure provides the basis for comparing tasks in terms of both percent members performing and average relative percent time spent.

Survey Sample

All eligible personnel were administered survey booklets. Table 1 displays survey respondents by DAFSC corresponding with the percent of assigned personnel as of March 1992. Table 2 shows distribution by paygrade. In addition, Table 3 displays survey respondents across MAJCOM groups. As shown in Table 3, the majority of 912X members are assigned to AFSC, AFLC, TAC, SAC, and MAC. As illustrated in these tables, the survey sample is representative. The 202 respondents in the final sample represent 66 percent of the eligible AFSC 912X personnel.

TABLE 1
DAFSC DISTRIBUTION BY SURVEY SAMPLE
AFSC 912X

<u>DAFSC</u>	<u>PERCENT OF ASSIGNED* (N=324)</u>	<u>PERCENT OF SAMPLE (N=202)</u>
912XA	83	83
912XB	7	6
912XD	9	11

* Assigned strength as of March 1992

NOTE: Columns may not add to 100 percent due to rounding

TABLE 2
PAYGRADE DISTRIBUTION OF SURVEY SAMPLE
AFSC 912X

<u>PAYGRADE</u>	<u>PERCENT OF ASSIGNED*</u>	<u>PERCENT OF SAMPLE</u>
O-1	7	7
O-2	23	24
O-3	36	37
O-4	19	19
O-5	10	9
O-6	5	3

Total Assigned* : 324

Total Eligible for Survey : 304**

Total in Sample: 202

Percent of Assigned in Sample: 62%

Percent of Eligible in Sample: 66%

*** Assigned strength as of March 1992**

**** Excludes those in PCS, retirement, discharge, or hospital status; and those with less than 6 weeks on the job**

NOTE: Columns may not add to 100 percent due to rounding

TABLE 3
COMMAND REPRESENTATION OF SURVEY SAMPLE
AFSC 912X

<u>COMMAND</u>	<u>PERCENT OF ASSIGNED*</u>	<u>PERCENT OF SAMPLE</u>
AFSC	18	22
AFLC	16	12
TAC	10	8
SAC	9	7
MAC	8	10
ATC	6	6
USAFE	6	6
AU	6	3
AFCEE	4	5
PACAF	4	5
ELM	3	1
AFCEA	2	3
HQ USAF	2	3
SPACECOM	2	3
OTHER	3	4

Other: AFIA, USAFA, AFOMS, ITC, AFRES, ANG, and AFDW

* Assigned strength as of March 1992

NOTE: Columns may not add to 100 percent due to rounding

Task Factor Administration

Selected experienced personnel completed a second booklet in addition to the job inventory booklet. This second booklet is used to gather information for training emphasis. The Training Emphasis (TE) booklets are processed separately from the job inventories and provide task rating information that is used in a number of different analyses discussed in more detail in the following section of this report.

TE is a rating of which tasks require structured training for first-assignment personnel. Structured training is training provided by resident technical schools, field training detachments (FTDs), mobile training teams (MTTs), OJT, or any other organized training method. Experienced officers (primarily senior captains and majors) completing TE booklets were asked to rate tasks on a 10-point scale (from no TE to extremely high TE). Ratings for first-assignment personnel were independently collected from 43 officers. Each experienced officer's ratings were compared to those of every other experienced officer. A statistical measurement of rating agreement, known as the interrater reliability, indicated acceptable agreement among raters as to the relative TE for each of the tasks. The average TE rating for the career ladder is 2.24, with a standard deviation of 1.82. These data provide essentially a rank ordering of tasks, whereby those with the highest ratings are perceived as most important for structured training.

TE ratings provide objective information that should be used along with percent members performing data when making training decisions. Percent members performing data provide information on how many personnel perform the tasks; TE ratings provide insights on which tasks need training. Using these factors, in conjunction with appropriate training documents and directives, utilization field managers can tailor training programs to accurately reflect the needs of the user by more effectively determining when, where, and how to train first-assignment AFSC 912X personnel.

Data Processing and Analysis

Once job inventories are returned from the survey incumbents, task responses and background information are optically scanned and entered into a UNISYS 1100 mainframe computer. Computer-generated programs, using Comprehensive Occupational Data Analysis Program (CODAP) techniques, are then applied to the data.

CODAP produces composite job descriptions for respondents based on their ratings of specific inventory tasks. These job descriptions provide information on percent members performing each task, the relative average percent time spent performing tasks, and the cumulative percent time spent by all members performing tasks in the inventory. In addition to the job descriptions based upon inventory task data, the program produces summaries that show how members of each group responded to each background item. Background items aid in

identifying characteristics of the group, such as DAFSCs represented, time in utilization field, total active federal military service (TAFMS), experience in various work areas, equipment operated, and job satisfaction levels.

SPECIALTY JOBS (Utilization Field Structure)

A key aspect of the USAF Occupational Analysis Program is to examine the job structure of a utilization field. On the basis of incumbent responses to survey questions, the tasks performed by utilization field personnel are examined, and jobs are identified based on the similarity of tasks and the relative time they spend performing the tasks. This analysis is based on what personnel are doing in the field as determined by task responses, in contrast to official definitions of their job. The resulting job structure is then compared to official utilization field documents. This information can be used to examine the accuracy and completeness of utilization field documents (AFR 36-1 Specialty Descriptions and Course Training Standards) and to gain an understanding of current utilization patterns.

An automated job clustering program is used to identify specialty jobs. This hierarchical grouping program is a basic part of the CODAP system for job analysis. Each individual job description (all of the tasks performed by that individual and the relative amount of time spent on those tasks) in the sample is compared to every other job description for tasks performed and the relative amount of time spent on each task in the job inventory. The automated system is designed to locate the two job descriptions with the most similar tasks and percent time spent ratings and combines them to form a composite job description. In successive stages, new members are added to initial groups or new groups are formed based on the similarity of tasks performed and similar time ratings in the individual job descriptions.

Structure Overview

The job structure was determined by performing a job type analysis of the 202 survey respondents from the AFSC 912XA/B/D utilization field. On the basis of task similarity and time spent, personnel separated into 12 different jobs (see Figure 1). These jobs are identified below. The stage (STG) and (GRP) number is a computer-generated reference number. The letter "N" stands for the number of personnel in each group.

AFSC 912X A/B/D UTILIZATION FIELD STRUCTURE

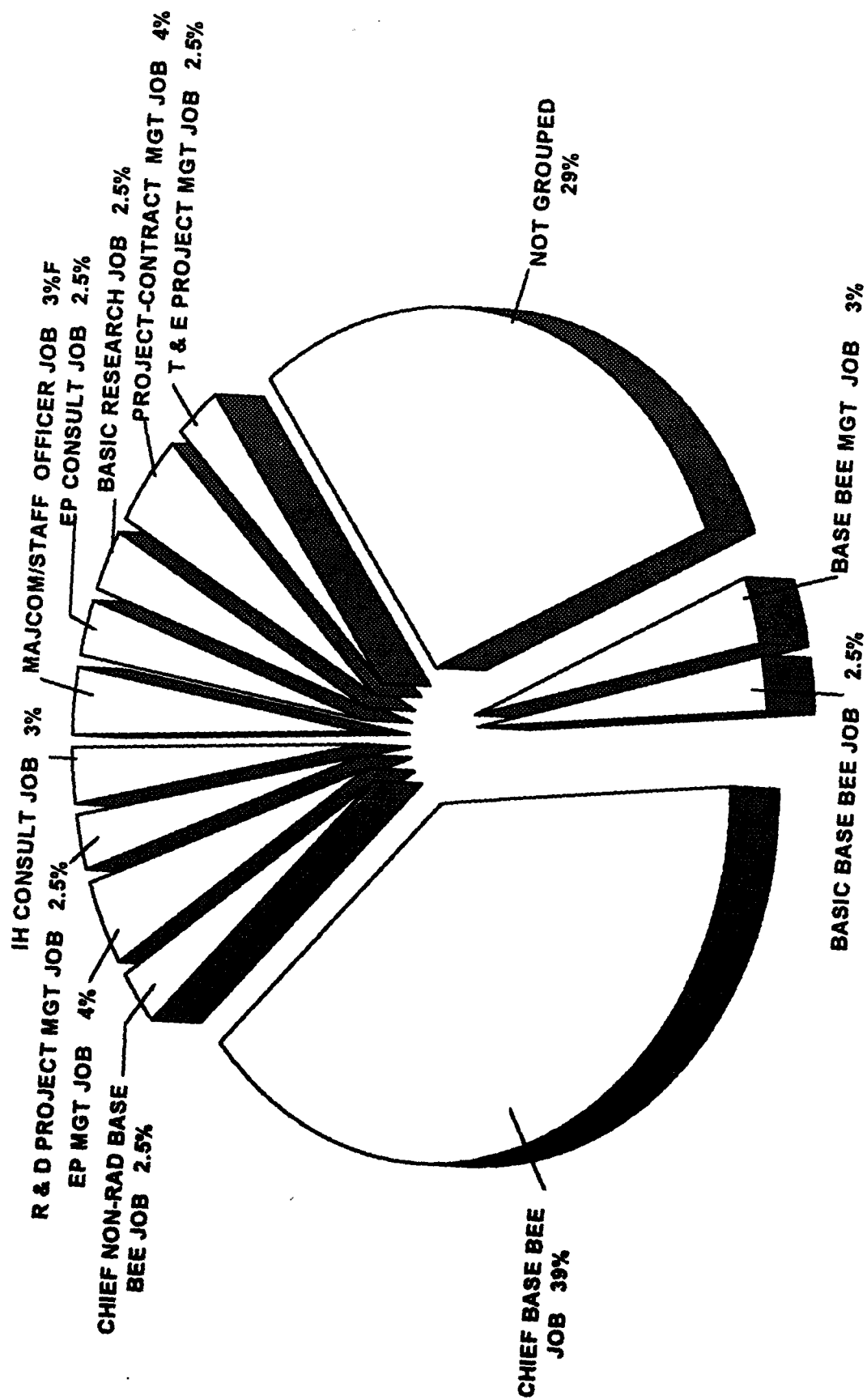


FIGURE 1

- I. BASIC BASE BEE JOB (STG91, N=5)
- II. CHIEF BASE BEE JOB (STG72, N=79)
- III. CHIEF NON-RADIATION BASE BEE JOB (STG58, N=5)
- IV. BASE BEE MANAGEMENT JOB (STG70, N=6)
- V. INDUSTRIAL HYGIENE CONSULTANT JOB (STG53, N=6)
- VI. ENVIRONMENTAL PROTECTION CONSULTANT JOB (STG57, N=5)
- VII. ENVIRONMENTAL PROTECTION MANAGEMENT JOB (STG74, N=8)
- VIII. PROJECT-CONTRACT MANAGEMENT JOB (STG62, N=8)
- IX. BASIC RESEARCH JOB (STG43, N=5)
- X. RESEARCH AND DEVELOPMENT PROJECT MANAGEMENT JOB (STG82, N=5)
- XI. TEST AND EVALUATION PROJECT MANAGEMENT JOB (GRP49, N=5)
- XII. MAJCOM/STAFF OFFICER JOB (STG65, N=6)

Seventy-one percent of the survey respondents are represented in the above job groups. The remaining 29 percent performed tasks, or a series of tasks, that did not group with the defined jobs. Several of the ungrouped survey respondents indicated they were in highly specialized one-of-a-kind positions with unique responsibilities requiring specialized skills acquired through off-duty education and experience. Examples of job titles given by these respondents include: Radiation Consultant, Water Quality Consultant, Medical Inspector, OSHA Liaison, Assistant for Environmental Quality, Chief Base Closure Operations, Chief Radioanalytical Branch, Chief Radiation Sciences, Chief of Industrial Hygiene, and Assistant Professor.

Descriptions of Utilization Field Jobs

Brief descriptions of the 12 utilization field jobs are presented below. In addition, Table 4 provides selected background information across these jobs, while Appendix A lists common tasks performed by incumbents in these groups.

TABLE 4

SELECTED BACKGROUND DATA FOR UTILIZATION FIELD JOBS

	CHIEF				IH		EP	
	BASIC BASE BEE JOB (STG 91)	CHIEF BASE BEE JOB (STG 72)	NON-RAD BASE BEE JOB (STG 58)	BASE BEE MGT JOB (STG 70)	CONSULT JOB (STG 53)	CONSULT JOB (STG 57)		
NUMBER IN GROUP	5	79	5	6	6	5		
PERCENT OF SAMPLE	2.5%	39%	2.5%	3%	3%	2.5%		
PERCENT IN CONUS	100%	75%	80%	100%	100%	60%		
DAFSC DISTRIBUTION								
9121A	40%	11%	20%	0%	0%	20%		
9126A	60%	89%	80%	67%	33%	0%		
9121B	0%	0%	0%	0%	17%	0%		
9126B	0%	0%	0%	33%	50%	20%		
9121D	0%	0%	0%	0%	0%	20%		
9126D	0%	0%	0%	0%	0%	40%		
PREDOMINANT PAYGRADES	O-2	O-3	O-2	O-4/5	O-3	O-3		
AVERAGE TIUF (MOS)	16	79	32	170	65	72		
AVERAGE TAFMS (MOS)	46	100	33	204	92	106		
PERCENT IN 1ST ASSG	60%	28%	100%	17%	34%	40%		
AVG NUMBER PERSONS SUPERVISED	1	5	2	9	1	1		
AVG NUMBER OF TASKS PERFORMED	178	343	131	219	113	186		

TABLE 4 (CONTINUED)

SELECTED BACKGROUND DATA FOR UTILIZATION FIELD JOBS

	PROJECT-			BASIC		R & D		T & E		MAJCOM/ STAFF OFFICER JOB (STG 65)
	EP MGT JOB (STG 74)	CONTRACT MGT JOB (STG 62)	RESEARCH JOB (STG 43)	PROJ MGT JOB (STG 82)	PROJ MGT JOB (GRP 49)	PROJ MGT JOB (STG 82)	PROJ MGT JOB (GRP 49)	PROJ MGT JOB (GRP 49)	PROJ MGT JOB (GRP 49)	
NUMBER IN GROUP	8	8	5	5	5	5	5	5	5	6
PERCENT OF SAMPLE	4%	4%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	3%
PERCENT IN CONUS	100%	100%	100%	100%	100%	100%	100%	100%	100%	83%
DAFSC DISTRIBUTION										
9121A	0%	13%	40%	0%	40%	0%	40%	40%	0%	0%
9126A	63%	63%	40%	0%	40%	0%	20%	20%	100%	100%
9121B	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
9126B	0%	0%	0%	0%	0%	0%	40%	40%	0%	0%
9121D	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
9126D	38%	25%	20%	100%	20%	100%	0%	0%	0%	0%
PREDOMINANT PAYGRADES	O-4/5	O-3	O-2	O-3/4	O-3	O-3/4	O-3	O-3	O-5	
AVERAGE T1CF (MOS)	148	69	51	130	83	130	83	83	236	
AVERAGE TAFMS (MOS)	204	76	61	135	84	135	84	84	274	
PERCENT IN 1ST ASSG	0%	13%	40%	0%	40%	0%	40%	40%	0%	0%
AVG NUMBER PERSONS SUPERVISED	10	3	0	1	2	1	2	2	0	
AVG NUMBER OF TASKS PERFORMED	225	110	41	154	70	154	70	70	120	

I. BASIC BASE BEE JOB (STG91, N=5). The Basic BEE job is one of four base-level BEE jobs. The five officers in this job represent 2.5 percent of the total survey sample. Members of this job perform the basic base-level functions. These are the officers who actually are conducting the industrial hygiene surveys. From inventorying shop chemicals to collecting air samples, they are spending the majority of their job time performing industrial hygiene tasks. Several pieces of industrial hygiene and readiness support equipment are used or operated including air sampling collection devices, anemometers, carbon monoxide detectors/meters, heat stress monitors, noise dosimeters, ABC M8 chemical detection paper, M17 series masks, M258A1 skin decontamination kits, and M272 chemical agent water test kits. On the average, members report performing 178 tasks. Common tasks include:

- collect air samples
- collect bulk samples
- collect weighted noise levels
- perform illumination surveys
- diagram industrial shop work area layout
- inventory shop chemicals
- perform industrial hygiene pre-surveys and preliminary walk-throughs
- draft or write industrial hygiene survey reports

This is one of the more junior jobs, with 60 percent of the officers in their first assignment. These DAFSC 912XA lieutenants average nearly 4 years of TAFMS.

II. CHIEF BASE BEE JOB (STG72, N=79). These 79 members or 39 percent of the total survey sample represent the largest job. Members of this base-level BEE job have a wide range of responsibilities. On the average, the Chief Base BEE performs 343 tasks, over 100 more than any of the other jobs, and supervises 5 subordinates. These officers are involved primarily with managing industrial hygiene, radiological health, and environmental protection activities. These officers use or operate several pieces of industrial hygiene, radiation protection, environmental protection, and readiness equipment including air sampling collection devices, anemometers, mercury vapor detector, AN/PDR 27T meters, scintillators, coliwasa, DPD kits (chlorine/pH analysis), ABC M8 chemical detection paper, M258A1 skin decontamination kits, and M272 chemical agent water test kits. Typical tasks performed by these incumbents include:

- evaluate industrial hygiene survey reports
- review AF Forms 2755, 2758, 2761, 2762, 2750, 2764, 2756, 2751
- evaluate requests for issue of hazardous materials
- analyze air sample data
- analyze ventilation data

- conduct ALARA reviews
- direct RF hazard evaluations
- direct TLD program

Composed mostly of DAFSC 9126A personnel, these officers have an average TAFMS of over 8 years and are predominantly captains.

III. CHIEF NON-RADIATION BASE BEE JOB (STG58, N=5). This job, represented by five officers, is very similar to the Chief Base BEE job, except that these officers do not manage radiological health activities. Performing an average of 131 tasks, these officers concentrate their time in management of industrial hygiene and environmental protection tasks. The Chief Non-Radiation Base BEE also uses or operates several pieces of industrial hygiene and environmental protection support equipment including air sampling collection devices, anemometers, mercury vapor detector, noise dosimeters, coliwasa, membrane filters, and pH/chlorine test strips. Typical tasks performed by these incumbents include:

- analyze impact noise levels
- conduct post-survey reviews of industrial hygiene case files
- approve or disapprove industrial hygiene case files
- direct noise surveys
- direct ventilation surveys
- analyze ventilation data
- participate in environmental protection committee meetings
- direct swimming pool water sampling

Composed mostly of DAFSC 9126A personnel, these junior officers have an average TAFMS of nearly 3 years and supervise an average of two people.

IV. BASE BEE MANAGEMENT JOB (STG70, N=6). These six members, or 3 percent of the total survey sample, represent the most senior base-level BEE job. Supervising an average of nine people, the majority of these officers' job time is involved with supervisory tasks (command and management, personnel, general administration, and resource management). However, over 25 percent of their job time is also spent performing and directing industrial hygiene and environmental protection activities. Members of this job use or operate some industrial hygiene support equipment including air sampling collection devices, mercury vacuums, noise dosimeters, oxygen deficiency meters, respirators, and sound level calibrators. Of the average 219 tasks performed by this group, typical tasks include:

- interpret regulations, manuals, supplements, or procedures
- draft or write officer performance reports (OPRs)
- approve or disapprove duty schedules
- coordinate follow-up on staff assistance report discrepancies
- review installation restoration program (IRP) projects
- direct confined space entry program
- advise on-scene commander of PPE requirements or evacuation and shelter zones
- participate in AF occupational safety and health council meetings

Composed of DAFSC 9126A and 9126B personnel, these senior officers have an average TAFMS of over 17 years and are predominantly majors and lieutenant colonels.

V. INDUSTRIAL HYGIENE CONSULTANT JOB (STG53, N=6). These six officers, representing 3 percent of the total survey sample, are the industrial hygiene "experts." The members of this job are from AF Systems Command (Air Force Materiel Command) and are responsible for providing consultation to base BEEs having questions or unusual problems with industrial hygiene issues. These officers use or operate the range of industrial hygiene support equipment including air sampling collection devices, anemometers, flowhoods, heat stress monitors, primary gas flow calibrators, and velometers. Of the average 113 tasks performed by the Industrial Hygiene Consultant job incumbents, representative tasks include:

- advise base BEEs on industrial hygiene matters
- construct and maintain consultant project folder
- conduct formal classroom training
- calibrate air sampling pumps
- interpret data trend analyses
- research reference materials or technical publications
- write consultative letters on support survey results
- advise commanders or staff agency personnel on matters, such as capabilities, procedures, or programs

Composed mostly of DAFSC 912XB personnel, these captains have an average TAFMS of slightly over 7 1/2 years with 34 percent in their first assignment.

VI. ENVIRONMENTAL PROTECTION CONSULTANT JOB (STG57, N=5). The Environmental Protection Consultant job is similar to the industrial hygiene consultant job in that these five officers are also from AF Systems Command (Air Force Materiel Command) and are responsible for providing consultation to base BEEs having questions or unusual and difficult problems. Only their area of "expertise" is with environmental protection issues. These officers

use or operate the range of environmental protection support equipment including composite/discrete samplers, DPD kits, flow meters, incubators, membrane filters, pH meters, and water analysis kits. Of the average 186 tasks performed by the Environmental Protection Consultant job incumbents, representative tasks include:

- advise base BEEs on environmental protection matters
- identify waste water sampling sites
- develop waste stream sampling strategies
- collect waste water samples
- direct storm water surveys
- collect storm water discharge samples
- evaluate base potable water sampling procedures
- advise base agencies of methods of water decontamination

Composed mostly of DAFSC 912XD personnel, these captains have an average TAFMS of over 8 1/2 years with 40 percent in their first assignment.

VII. ENVIRONMENTAL PROTECTION MANAGEMENT JOB (STG74, N=8). This group of eight senior officers, equating to 4 percent of the total survey sample, is involved with the Air Force's installation restoration program. Representing HQ USAF, as well as AF Systems and AF Logistics Command (AF Materiel Command), these officers supervise an average of 10 people and are responsible for environmental protection program and contract management activities. Members perform an average of 225 tasks. Common tasks include:

- assign special projects to personnel for staffing actions
- draft or write staff studies or staff summaries
- evaluate effects of funding cuts on programs
- review budgets or budget estimates
- approve or disapprove MOUs or MOAs
- review installation restoration program projects
- review ECAMP
- participate in environmental protection committee meetings

These senior officers are predominantly in paygrades O-4/O-5, with an average of 17 years' TAFMS. Sixty-three percent have DAFSC 9126A; the remaining officers have DAFSC 9126D.

VIII. PROJECT-CONTRACT MANAGEMENT JOB (STG62, N=8). This group of eight officers performs the environmental protection program and contract management activities. Forty-five percent of their job time is spent performing project management tasks. These officers perform an average of 110 tasks. Common tasks include:

- review SOWs
- approve or disapprove SOWs
- coordinate with customers on receipt or nonreceipt of contract deliverables
- review contract deliverables or informal technical information reports
- advise personnel on policies or procedures for handling contracting requirements
- review installation restoration program projects
- review monthly research and development packages
- review site characterizations

This job is composed of DAFSC 912XA and 9126D personnel. Personnel within this cluster supervise an average of three subordinates. Overall, these officers are predominantly captains with an average TAFMS of over 6 years.

IX. BASIC RESEARCH JOB (STG43, N=5). This group of five individuals represents 2.5 percent of the total survey sample. These members perform research and development at the purest level, with approximately 50 percent of their relative job time spent performing research and development duties. Support equipment used includes hot plate/stirrers and refrigerators. These officers perform an average of 41 tasks, much less than any other job group. Typical tasks include:

- perform research literature reviews
- research reference materials or technical publications
- develop research hypothesis
- plan research experiments
- evaluate instrumentation and setup
- collect research data
- analyze research data
- analyze results of research

These personnel, involved in research and development, are members of AF Systems Command and Air University. Incumbents in this job have an average TAFMS of slightly over 5 years and are predominantly in paygrade O-2.

X. RESEARCH AND DEVELOPMENT PROJECT MANAGEMENT JOB (STG82, N=5). These five officers are members of AF Civil Engineering Support Agency at Tyndall AFB. These officers perform general project management tasks relating to research and development programs. Supervising an average of 1 person, members perform an average of 154 tasks. Common tasks include:

- coordinate research programs, projects, or activities with related or interested agencies
- prepare justification for programs, projects, or systems for award of funds
- participate in technology transfers
- prepare input for technology area reviews
- draft or write program approval document
- evaluate research results
- approve or disapprove contractor's final report packages
- draft or write scientific or professional papers

These officers are predominantly in paygrade O-3/O-4, with an average TAFMS of 11 years. One hundred percent have DAFSC 9126D.

XI. TEST AND EVALUATION PROJECT MANAGEMENT JOB (GRP 49, N=5). This group of five individuals represents 2.5 percent of the total survey sample. These members are responsible for the testing and evaluation of new weapon systems. Approximately 55 percent of their relative job time is spent performing test and evaluation and project management tasks designed to minimize hazardous material or waste of new products. These officers perform an average of 70 tasks, relatively less than most of the other job groups. Typical tasks include:

- develop test and evaluation programs
- review system drawings and specifications
- review engineering change proposals, advanced changes studies, or notices or requests for deviation
- define design requirements related to minimizing hazardous material or waste for inclusion in contractual documents
- review contract deliverables and data
- review CDRLs
- coordinate final contractor reports with interested parties
- participate in design reviews, such as SRRs, SDRs, and CDRs

These personnel, involved in test and evaluation, are members of AF Systems Command. Incumbents in this job have an average TAFMS of slightly over 84 months and are predominantly in paygrade O-3.

XII. MAJCOM/STAFF OFFICER JOB (STG65, N=6): The six members in this group represent the most senior level of personnel in the survey sample. With an average O-5 paygrade, these colonels represent HQ USAF, USAFE, PACAF, MAC and ANG. One hundred percent have DAFSC 9126A. With an average of nearly 23 years' TAFMS, these incumbents devote approximately 80 percent of their time performing command and managerial, or administrative functions. Representative tasks of the average 120 tasks performed by this group include:

- draft or write point, position, or talking papers
- draft or write staff studies or staff summaries
- draft or write policy or procedure messages or letters
- draft or write directives, such as manuals, regulations,
or supplements
- evaluate MAJCOM publications
- evaluate technical publications, such as regulations, standards,
or reports
- evaluate suggestions (AF Form 1000)
- implement AF TQM program

Comparison of Specialty Jobs

Twelve jobs were identified in the AFSC 912XA/B/D utilization field structure. These jobs account for a total of 143 members or 71 percent of the survey sample. This utilization field structure indicates that members of the AFSC 912X career field do not perform program-specific tasks. Of the major BEE programs: industrial hygiene, environmental protection, radiological health, research and development, test and evaluation, project management, and BEE readiness, only in the consultant jobs (V and VI) and the basic research and development job (IX) were the officers specialized, performing tasks associated with only one program. The other jobs require a range of skills and knowledges across duties. Table 5 displays the relative amount of time spent across each of the 14 duties for each of the utilization field jobs. In four of the jobs involving Base BEE activities (I, II, III, IV), officers perform industrial hygiene, environmental protection, radiological health, and/or BEE readiness duties. Project management tasks were performed in conjunction with environmental protection, research and development, and test and evaluation duties (Jobs VII, VIII, X, and XI). Finally, each job involved some degree of command, management, and other supervisory duties.

TABLE 5

AVERAGE PERCENT TIME SPENT ON DUTIES BY UTILIZATION FIELD JOBS

DUTIES	BASIC BASE BEE JOB (STG 91)	CHIEF		CHIEF NON-RAD BASE BEE JOB (STG 58)	BASE		IH CONSULT JOB (STG 53)	EP	
		CHIEF BASE BEE JOB (STG 72)	CHIEF BASE BEE JOB (STG 70)		BASE BEE MGT JOB (STG 57)	CONSULT JOB (STG 53)	CONSULT JOB (STG 57)		
A COMMAND AND MANAGEMENT	5	10	12	11	10				
B PERSONNEL	2	5	5	1	4				
C RESOURCE MANAGEMENT	1	2	0	1	9				
D GENERAL ADMINISTRATION	6	7	9	25	12				
E INSPECTION AND EVALUATION	2	3	2	-	5				
F TRAINING	1	2	-	2	1				
G PERFORMING INDUSTRIAL HYGIENE TASKS	61	36	53	32	18				
H PERFORMING RADIOLOGICAL HEALTH TASKS	2	12	4	0	2				
I PERFORMING ENVIRONMENTAL PROTECTION TASKS	5	11	10	1	6				
J CONSULTING TASKS	1	1	1	14	2				
K PERFORMING RESEARCH AND DEVELOPMENT TASKS	-	-	0	1	-				
L PERFORMING TEST AND EVALUA- TION TASKS	1	-	-	2	-				
M PERFORMING PROJECT MANAGE- MENT TASKS	1	1	-	8	1				
N PERFORMING BIOENVIRONMENTAL ENGINEERING (BEE) READINESS	12	9	3	1	8				

- Indicates less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding

TABLE 5 (CONTINUED)

AVERAGE PERCENT TIME SPENT ON DUTIES BY UTILIZATION FIELD JOBS

DUTIES	EP MGT JOB (STG 74)	PROJECT- CONTRACT MGT JOB (STG 62)		BASIC RESEARCH JOB (STG 43)	R & D PROJ MGT JOB (STG 82)		T & E PROJ MGT JOB (GRP 49)		MAJCOM/ STAFF OFFICER JOB (STG 65)
A COMMAND AND MANAGEMENT	27	13	5	7	17	45			
B PERSONNEL	11	2	0	2	2	3			
C RESOURCE MANAGEMENT	15	5	1	8	1	7			
D GENERAL ADMINISTRATION	13	14	33	22	13	25			
E INSPECTION AND EVALUATION	4	-	0	-	-	5			
F TRAINING	2	1	8	-	1	3			
G PERFORMING INDUSTRIAL HYGIENE TASKS	-	-	0	-	1	1			
H PERFORMING RADIOLOGICAL HEALTH TASKS	-	0	0	-	1	1			
I PERFORMING ENVIRONMENTAL PROTECTION TASKS	6	13	3	1	-	3			
J CONSULTING TASKS	2	1	0	-	2	4			
K PERFORMING RESEARCH AND DEVELOPMENT TASKS	3	4	50	27	7	1			
L PERFORMING TEST AND EVALUA- TION TASKS	2	1	0	1	30	-			
M PERFORMING PROJECT MANAGE- MENT TASKS	12	45	1	30	25	1			
N PERFORMING BIOENVIRONMENTAL ENGINEERING (BEE) READINESS	2	1	0	0	0	1			

- Indicates less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding

Comparison of AFSC 912X and AFSC 907X0 Job Structures

Under normal circumstances, job structures are not compared between two separate surveys that have different task lists. But, because of the special interest of the similarities and differences between the officer Bioenvironmental Engineers (AFSC 912X) jobs and the enlisted Bioenvironmental Engineers (AFSC 907X0) jobs, a generalized comparison between the results of the job structure analysis was conducted.

The BEE career ladder (AFSC 907X0) OSR was completed in May 1991. Data for the survey were collected by administering USAF Job Inventory AFPT 90-907-896, dated August 1989, to all eligible AFSC 907X0 personnel. The job inventory consisted of 525 tasks grouped into 13 duty headings. The 633 respondents included in the final survey sample represented 71 percent of the total 886 DAFSC personnel assigned. The six jobs identified in the job structure analysis include:

- I. Administration Specialists IJT
- II. Water Monitoring Personnel Cluster
- III. Industrial Hygiene Cluster
- IV. NCOIC/Supervisory Cluster
- V. Radiological Health IJT
- VI. Technical Training Cluster

While most of the job titles are self-explanatory, selected background data and lists of tasks commonly performed by members in each job are located in the AFSC 907X0 OSR. Copies of the OSR, job inventory, and related computer products are available from USAF Occupational Measurement Squadron, Airmen Analysis Flight, Randolph AFB, Texas 78150-4449.

A comparison of the 12 jobs identified in the AFSC 912X officer survey and the six jobs from the 1991 AFSC 907X0 enlisted survey indicates very few similarities. The review of the jobs performed by the current AFSC 912X sample indicates that most of the 1992 officer job groups can not be matched to jobs performed by job groups identified in the 1991 enlisted report. The only two jobs that appear to cover the same tasks are the Basic Base BEE job (AFSC 912X) and the Industrial Hygiene cluster (AFSC 907X0). Members of both these jobs perform similar industrial hygiene tasks, such as annotating or completing AF Forms 2214, 2754, 2755, 2756, 2757, 2758, 2761, 2762, 2764, performing noise and illumination surveys, and collecting air samples. Recall, members of the AFSC 912X Basic Base Bee Job consist primarily of lieutenants in their first assignment. Members of the AFSC 907X0 Industrial Hygiene job predominately hold a paygrade of E-4, 5-skill level, and have over three years' TAFMS.

The major differences between the officer and enlisted job structure include the officers performing research and development, test and evaluation, and project management duties. No similar tasks were identified in the enlisted AFSC 907X0 inventory. Also, the officer AFSC 912X Base BEE and Consultant jobs involve industrial hygiene, environmental protection, and

radiological health activities at a directing or supervisory level. The enlisted AFSC 907X0 Industrial Hygiene, Water Monitoring Personnel, Radiological Health, and Administration Specialists jobs involve performing administrative duties, conducting industrial hygiene programs, monitoring drinking water, performing environmental monitoring, and conducting radiological health program duties at the performance level.

ANALYSIS OF DAFSC GROUPS

An examination of DAFSC groups, along with the analysis of specialty jobs, is an important part of each occupational analysis. The DAFSC analysis reveals similarities and differences among various levels and shreds based on the tasks performed and the relative time spent on particular duties. This information may then be used to determine whether personnel are utilized in the manner specified by the Specialty Descriptions (AFR 36-1) and may serve as a basis for considering changes to current utilization policies and training programs.

Table 6 presents the relative percent time spent in each duty across DAFSC groups. This table illustrates the pattern of career progression in the utilization field, as well as the similarities and differences between the time spent performing each duty by the three shreds. As shown, all DAFSC groups spend approximately 20 percent of their time performing management duties and over 10 percent of their time is spent performing general administration tasks.

Slight differences occur between DAFSC 9121 and 9126 groups, in that DAFSC 9121 personnel spend a greater amount of time performing project management tasks, while DAFSC 9126 personnel are spending slightly more time performing radiological health tasks.

The differences among the three shreds are much larger. Specifically, DAFSC 912XA officers spend 25 percent of their time performing industrial hygiene tasks, while DAFSC 912XB and DAFSC 912XD personnel spend only 15 percent and less than 1 percent of their time, respectively on these same tasks. Similarly, DAFSC 912XA officers spend more time performing radiological health and BEE readiness tasks than members of the other two shreds. DAFSC 912XB officers spend a greater amount of their time performing consulting tasks when compared to A- and D-shred groups. Finally, DAFSC 912XD officers spend 36 percent of their time performing project management and research and development tasks versus the 8 and 7 percent spent by DAFSC 912XA and DAFSC 912XB groups. The distribution of DAFSC personnel across specialty jobs is shown in Table 7. Specific DAFSCs are discussed below.

TABLE 6

AVERAGE PERCENT TIME SPENT PERFORMING DUTIES BY 912X DAFSC GROUPS

<u>DUTIES</u>	DAFSC 9121 (N=27)	DAFSC 9126 (N=175)	DAFSC 912XA (N=167)	DAFSC 912XB (N=12)	DAFSC 912XD (N=23)
A COMMAND AND MANAGEMENT	12	15	15	18	13
B PERSONNEL	3	6	5	7	6
C RESOURCE MANAGEMENT	2	4	3	6	8
D GENERAL ADMINISTRATION	14	13	12	17	18
E INSPECTION AND EVALUATION	1	3	3	1	1
F TRAINING	2	4	3	9	7
G PERFORMING INDUSTRIAL HYGIENE TASKS	24	21	25	15	*
H PERFORMING RADIOLOGICAL HEALTH TASKS	3	7	8	2	*
I PERFORMING ENVIRONMENTAL PROTECTION TASKS	9	8	9	3	8
J CONSULTING TASKS	3	2	2	8	2
K PERFORMING RESEARCH AND DEVELOPMENT TASKS	7	4	3	2	15
L PERFORMING TEST AND EVALUATION TASKS	3	1	1	5	1
M PERFORMING PROJECT MANAGEMENT TASKS	13	6	5	5	21
N PERFORMING BIOENVIRONMENTAL ENGINEERING READINESS	4	5	6	2	1

* Less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding

TABLE 7

DISTRIBUTION OF 912X DAFSC GROUP MEMBERS ACROSS UTILIZATION FIELD JOBS
(NUMBER AND PERCENT RESPONDING)

UTILIZATION FIELD JOBS	DAFSC 9121 (N=27)		DAFSC 9126 (N=175)		DAFSC 912XA (N=167)		DAFSC 912XB (N=12)		DAFSC 912XD (N=23)	
	NBR	PCT	NBR	PCT	NBR	PCT	NBR	PCT	NBR	PCT
I. BASIC BASE BEE (N=5)	1	4%	4	2%	5	3%	0	0%	0	0%
II. CHIEF BASE BEE (N=79)	9	33%	70	40%	79	47%	0	0%	0	0%
III. CHIEF NON-RADIATION BASE BEE (N=5)	2	7%	3	2%	5	3%	0	0%	0	0%
IV. BASE BEE MANAGEMENT (N=6)	0	0%	6	3%	4	2%	2	17%	0	0%
V. INDUSTRIAL HYGIENE CONSULTANT (N=6)	1	4%	5	3%	2	1%	4	33%	0	0%
VI. ENVIRONMENTAL PROTECTION CONSULTANT (N=5)	2	7%	3	2%	1	1%	1	8%	3	13%
VII. ENVIRONMENTAL PROTECTION MANAGEMENT (N=8)	0	0%	8	5%	5	3%	0	0%	3	13%
VIII. PROJECT-CONTRACT MANAGEMENT (N=8)	1	4%	7	4%	6	4%	0	0%	2	9%
IX. BASIC RESEARCH (N=5)	2	7%	3	2%	4	2%	0	0%	1	4%
X. RESEARCH & DEVELOPMENT PROJECT MANAGEMENT (N=5)	0	0%	5	3%	0	0%	0	0%	5	21%
XI. TEST & EVALUATION PROJECT MANAGEMENT (N=5)	2	7%	3	2%	3	1%	2	17%	0	0%
XII. MAJCOM/STAFF OFFICER (N=6)	0	0%	6	3%	6	4%	0	0%	0	0%
NOT GROUPED (N=59)	7	26%	52	30%	47	28%	3	25%	9	39%
TOTAL	22	99%	175	101%	167	99%	12	100%	23	99%

* Less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding

Skill-Level Descriptions

DAFSC 9121A/B/D. The 27 officers with a 9121 DAFSC represent 13 percent of the survey sample. They perform an average of 183 tasks, with 155 tasks accounting for approximately 50 percent of their job time. Twenty-four percent of their job time is spent performing industrial hygiene tasks, 13 percent of their time is spent performing project management tasks, and 17 percent performing managerial functions (see Table 6). These officers perform primarily in the Chief Base BEE specialty job (33 percent, see Table 7). When asked to identify programs in which they spend most of their job time, 37 percent of DAFSC 9121 officers indicated they spend most of their job time with industrial hygiene programs, 30 percent spend most of their job time with environmental protection programs, 7 percent with research and development programs, and another 7 percent indicated they spend most of their job time with test and evaluation functions.

DAFSC 9121 paygrades range from second lieutenant to lieutenant colonel. In this sample, 74 percent are second and first lieutenants, 19 percent are captains, and 8 percent are majors and lieutenant colonels. Thirty-three percent are assigned to AFSC, 15 percent to AFLC, and 11 percent to TAC. With an average time in the utilization field of less than 3 years, they directly supervise an average of two people.

DAFSC 9126A/B/D. The 175 DAFSC 9126A/B/D officers (87 percent of the 912X survey sample) perform an average of 213 tasks with 202 tasks accounting for approximately 50 percent of their job time. These officers supervise an average of four people and spend 25 percent of their time on supervisory and managerial tasks (duties A through C). Another 21 percent of their time is spent performing industrial hygiene tasks. Forty percent of DAFSC 9126 personnel are members of the Chief Base BEE specialty job (see Table 7). When asked to identify the programs in which they spend most of their job time, 39 percent of DAFSC 9126 officers indicated they spend most of their job time with industrial hygiene programs, 23 percent with environmental protection programs, and 10 percent indicated they spend most of their job time with administration functions.

DAFSC 9126 range in rank from lieutenant to colonel. In this sample, 24 percent are first lieutenants, 40 percent are captains, 22 percent are majors, and 14 percent are lieutenant colonels and colonels. These more senior officers average 8-1/2 years in the utilization field. Twenty percent are assigned to AFSC, 12 percent to AFLC, and 11 percent to MAC.

Analysis of DAFSC 912XA/B/D groups identified certain tasks that were common to all DAFSC groups. Examples of these commonly performed tasks include prepare and present formal and informal briefings, read current periodicals and journals relating to field of work, read technical publications, schedule and make arrangements for TDYs, and proofread correspondence, forms, and reports. Forty-one such common tasks performed by greater than 50 percent of DAFSC 912XA/B/D personnel are listed in Table 8.

TABLE 8
TASKS PERFORMED BY GREATER THAN 50 PERCENT
OF DAFSC 912X A/B/D PERSONNEL
(N=202)

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
D254 Present informal briefings	82
D257 Read current periodicals and journals relating to field of work	81
D258 Read technical publications, such as regulations, standards, or reports	79
D251 Prepare informal briefings	75
D253 Present formal briefings	75
D263 Schedule and make arrangements for temporary duty (TDY) trips	74
D250 Prepare formal briefings	73
D256 Proofread correspondence, forms, or reports	72
D227 Draft or write memoranda for record (MFR)	71
A48 Draft or write point, position, or talking papers	71
A2 Advise commanders or staff agency personnel on matters, such as capabilities, procedures, or programs	67
D259 Research reference materials or technical publications	64
B97 Approve or disapprove leaves or passes	64
A71 Investigate problems, such as incidents or complaints	63
D246 Participate in professional meetings or conferences	62
A78 Participate in environmental protection committee meetings	61
A47 Draft or write OIs	61
D267 Type correspondence, reports, or forms	61
A70 Interpret regulations, manuals, supplements, or procedures	61
A62 Evaluate OIs	58
A30 Coordinate with Armstrong Lab Occupational and Environmental Health Directorate (AL/OE) personnel for analysis support	57
B124 Draft or write recommendations for decorations or awards	55
A8 Approve or disapprove operating instructions (OIs)	55
G350 Analyze air sample data	54
G355 Analyze ventilation data	53
B118 Draft or write enlisted performance reports (EPRs)	53
B113 Determine work priorities for subordinates	53
G441 Evaluate industrial hygiene survey reports	52
A39 Develop work methods or procedures	52
A72 Monitor suspenses	52
B95 Advise subordinates on unit policies or procedures	52

TABLE 8 (CONTINUED)

TASKS PERFORMED BY GREATER THAN 50 PERCENT
OF DAFSC 912X A/B/D PERSONNEL
(N=202)

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
E291 Review results of previous IG inspections, SAVs, or audits	52
A69 Interpret data trend analyses	51
G351 Analyze equivalent continuous levels (ECL) using noise dosimeters	51
D231 Draft or write trip reports	51
D235 Evaluate blueprints or plans for bioenvironmental engineering controls	51
G499 Review AF Forms 2755	50
G498 Review AF Forms 2754	50
B96 Approve or disapprove duty schedules	50
D260 Review AF Forms 332 (Base Civil Engineer Work Request)	50
B127 Endorse EPRs	50

Examples of tasks distinguishing DAFSC 9121A/B/D officers from DAFSC 9126A/B/D officers are presented in Table 9. As expected, the key difference is a greater emphasis with top managerial functions for DAFSC 9126 officers. Examples of tasks with the greatest differences in members performing include: DAFSC 9121 officers coordinate final contractor reports with interested parties, approve or disapprove statements of work, collect air samples, and collect impact noise levels. In contrast, DAFSC 9126 officers approve or disapprove TDY requests, draft or write OPRs, determine work priorities for subordinates, and monitor suspenses.

DAFSC 912XA. The 167 members of the A-shred (83 percent of the survey sample) are clearly performing the Chief Base BEE job. They perform an average of 225 tasks and spend 42 percent of their time performing industrial hygiene, radiological health, and environmental protection tasks (Duties G, H, and I, see Table 5). Examples of tasks performed by this group include: participate in environmental protection committee meetings, draft or write OIs, analyze ventilation data, and analyze air sample data. A more comprehensive description of these "General" Bioenvironmental Engineers can be found in Table 10.

Several tasks help distinguish 9121A from 9126A personnel. The key differences are a greater time spent performing project management tasks by DAFSC 9121A officers versus greater time spent performing radiological health tasks as well as performing the top managerial functions for 9126A officers. Examples of tasks with the greatest differences in members performing include DAFSC 9121A personnel annotating or completing Engineering Noise Survey forms, coordinating final contractor reports, and calibrating air sampling pumps. In contrast, DAFSC 9126A personnel advise commanders or staff agency personnel, review ECAMP, draft or write responses to self-inspection or IG discrepancy reports, and evaluate suggestions.

DAFSC 912XB. The 12 members of the B-shred (6 percent of the survey sample) perform in the Industrial Hygiene Consultant job (33 percent), the Base BEE Management job (17 percent), and Test and Evaluation Project Management job (17 percent). They perform an average of 129 tasks and spend 15 percent of their time performing industrial hygiene tasks, 9 percent training, and 8 percent performing consulting tasks (Duties G, F, and J, see Table 5). Examples of tasks performed by this group include advise base BEEs on industrial hygiene matters, develop procedures for performing new industrial hygiene surveys, and conduct formal classroom training. A more comprehensive description of these "Industrial Hygiene" BEEs can be found in Table 11.

Several tasks helped distinguish 9121B from 9126B personnel. The key differences are DAFSC 9121B officers spend a greater amount of time performing consulting tasks versus the DAFSC 9126B officers spend more time performing the top managerial functions. Examples of tasks with the greatest differences in members performing include DAFSC 9121B personnel drafting or writing project programs documentation, packaging and shipping air samples, conducting mobility training, performing human vibration surveys, and setting up field

TABLE 9

REPRESENTATIVE TASK DIFFERENCES BETWEEN
DAFSC 9121 A/B/D AND DAFSC 9126 A/B/D PERSONNEL
(PERCENT MEMBERS PERFORMING)

<u>TASKS</u>	<u>DAFSC 9121 (N=27)</u>	<u>DAFSC 9126 (N=175)</u>	<u>DIFF</u>
M883 Coordinate final contractor reports with interested parties	37	14	23
M877 Approve or disapprove statement of work (SOWs)	41	20	21
G383 Collect air samples	59	39	20
G387 Collect impact noise levels	37	17	20
G359 Annotate or complete AF Forms 1622 (Engineering Noise Survey)	41	22	19
G381 Calibrate air sampling pumps	52	34	18
M902 Establish baseline requirements for projects	26	8	18
J737 Package and ship equipment and supplies	26	9	17
K805 Perform research literature reviews	26	9	17
G491 Perform ventilation pre-surveys	41	25	16
M940 Prepare SOWs	37	21	16
G369 Annotate or complete AF Forms 2763 (Industrial Hygiene Ventilation Pre-survey)	52	37	15
J743 Perform sound intensity surveys	18	3	15
M890 Define scope or technical boundaries of project	33	18	15
G467 Inventory shop chemicals	45	31	14
I618 Collect storm water discharge samples	30	16	14
G388 Collect octave band noise levels	33	20	13
G389 Collect ventilation data using face velocity method	52	39	13
G396 Conduct confined space entry equipment training	22	9	13
K787 Evaluate instrumentation and set-up	18	5	13
K814 Present research findings at meetings	18	5	13
L866 Write test and evaluation reports	15	2	13
M873 Approve or disapprove contractor's final report packages	30	17	13
A10 Approve or disapprove point, position, or talking papers	19	40	-21
C205 Review budgets or budget estimates	4	25	-21
E285 Evaluate new equipment for purchase	22	43	-21
N974 Calculate source strength for toxic corridor calculations	11	32	-21
A24 Assign special projects to personnel for staffing actions	15	37	-22

TABLE 9 (CONTINUED)

REPRESENTATIVE TASK DIFFERENCES BETWEEN
DAFSC 9121 A/B/D AND DAFSC 9126 A/B/D PERSONNEL
(PERCENT MEMBERS PERFORMING)

<u>TASKS</u>	<u>DAFSC 9121 (N=27)</u>	<u>DAFSC 9126 (N=175)</u>	<u>DIFF</u>
E291 Review results of previous IG inspections, SAVs, or audits	33	55	-22
H547 Direct laser hazard evaluations	11	33	-22
A75 Participate in Air Force occupational safety and health council meetings	26	49	-23
A88 Review installation restoration program (IRP) projects	18	41	-23
G447 Evaluate requests for EDP	11	34	-23
H600 Review results of sealed source leak tests	11	34	-23
B127 Endorse EPRs	30	53	-23
A4 Approve or disapprove inputs to Interservice Support Agreements	7	31	-24
D250 Prepare formal briefings	52	76	-24
H596 Review radioactive material permit requests	19	43	-24
A86 Review ECAMP	26	51	-25
E282 Draft or write responses to self-inspection or IG discrepancy reports	4	29	-25
H546 Direct ionizing radiation hazards evaluations	15	40	-25
A2 Advise commanders or staff agency personnel on matters, such as capabilities, procedures, or programs	44	70	-26
A64 Evaluate suggestions (AF Form 1000)	19	45	-26
A72 Monitor suspenses	30	56	-26
E287 Initiate corrective actions to resolve discrepancies identified in inspections or evaluations	15	41	-26
B113 Determine work priorities for subordinates	30	57	-27
B123 Draft or write officer performance reports (OPRs)	18	45	-27
A18 Approve or disapprove temporary duty (TDY) requests	18	46	-28

TABLE 10
REPRESENTATIVE TASKS PERFORMED BY
DAFSC 912XA PERSONNEL
(N=167)

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
D263 Schedule and make arrangements for temporary duty (TDY) trips	74
D256 Proofread correspondence, forms, or reports	72
D227 Draft or write memoranda for record (MFR)	70
A48 Draft or write point, position, or talking papers	68
A78 Participate in environmental protection committee meetings	68
A71 Investigate problems, such as incidents or complaints	67
A47 Draft or write OIs	66
A2 Advise commanders or staff agency personnel on matters, such as capabilities, procedures, or programs	65
A62 Evaluate OIs	65
D259 Research reference materials or technical publications	63
D246 Participate in professional meetings or conferences	62
G355 Analyze ventilation data	62
G350 Analyze air sample data	62
D267 Type correspondence, reports, or forms	61
A70 Interpret regulations, manuals, supplements, or procedures	61
G441 Evaluate industrial hygiene survey reports	60
G375 Approve or disapprove industrial hygiene case files	59
G502 Review AF Forms 2758	59
G499 Review AF Forms 2755	59
G498 Review AF Forms 2754	59
G351 Analyze equivalent continuous levels (ECL) using noise dosimeters	59
B118 Draft or write enlisted performance reports (EPRs)	59
E291 Review results of previous IG inspections, SAVs, or audits	59
G423 Direct BES involvement in hazardous communication (HazCom) programs	58
D235 Evaluate blueprints or plans for bioenvironmental engineering controls	58
G503 Review AF Forms 2761	57
G504 Review AF Forms 2762	57
G496 Review AF Forms 2750	57
G510 Review DD Forms 2214	56
G420 Direct air sampling surveys	56
A72 Monitor suspenses	55

TABLE 10 (CONTINUED)
 REPRESENTATIVE TASKS PERFORMED BY
 DAFSC 912XA PERSONNEL
 (N=167)

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
G453 Identify controls to minimize exposure to airborne contaminants	55
G363 Annotate or complete AF Forms 2754 (Chronological Record of Workplace Surveillance)	55
G514 Review workplace narratives and workarea diagrams	55
G497 Review AF Forms 2751	55
B113 Determine work priorities for subordinates	54
G493 Research MSDSs	54
G500 Review AF Forms 2756	54
G506 Review AF Forms 2764	54
G376 Approve or disapprove industrial hygiene inspection reports	53

TABLE 11
 REPRESENTATIVE TASKS PERFORMED BY
 DAFSC 912XB PERSONNEL
 (N=12)

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
A2 Advise commanders or staff agency personnel on matters, such as capabilities, procedures, or programs	83
D225 Draft or write correspondence, such as letters or messages for electrical transmissions	83
A48 Draft or write point, position, or talking papers	83
D227 Draft or write memoranda for record (MFR)	83
A70 Interpret regulations, manuals, supplements, or procedures	75
D263 Schedule and make arrangements for temporary duty (TDY) trips	75
D256 Proofread correspondence, forms, or reports	75
J720 Advise base BEEs on industrial hygiene matters	67
J729 Develop procedures for performing new industrial hygiene surveys	67
D259 Research reference materials or technical publications	67
D267 Type correspondence, reports, or forms	67
D231 Draft or write trip reports	67
B123 Draft or write officer performance reports (OPRs)	67
D246 Participate in professional meetings or conferences	67
B97 Approve or disapprove leaves or passes	67
F298 Conduct formal classroom training	58
J727 Construct and maintain consultant project folder	58
A39 Develop work methods or procedures	58
A49 Draft or write policy or procedure messages or letters	58
D230 Draft or write technical reports	58
A71 Investigate problems, such as incidents or complaints	58
D252 Prepare status boards, charts, or graphs	58
A1 Advise Air Force Reserves (AFRES) or Air National Guard (ANG) agencies or personnel	58
B112 Counsel personnel on personal- or military-related matters	58
A85 Present program briefings to visitors	58
B124 Draft or write recommendations for decorations or awards	58
C160 Conduct or participate in planning meetings	58
D264 Schedule conferences, meetings, or workshops	58
A69 Interpret data trend analyses	58
J750 Select survey team members for consultation visits	50

TABLE 11 (CONTINUED)

REPRESENTATIVE TASKS PERFORMED BY
DAFSC 912XB PERSONNEL
(N=12)

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
G350 Analyze air sample data	50
A30 Coordinate with Armstrong Lab, Occupational and Environmental Health Directorate (AL/OE) personnel for analysis support	50
A38 Develop unit goals or objectives	50
A66 Evaluate USAF publications	50
A10 Approve or disapprove point, position, or talking papers	50
J753 Write consultative letters on support survey results	42
J736 Log telephone consultations into computer data base system	42
A81 Participate in staff working groups	42
D229 Draft or write scientific or professional papers	42

laboratories, and calibrating air sampling pumps. In contrast, DAFSC 9126B personnel approve or disapprove leaves or passes, draft or write OPRs, conduct or participate in planning meetings, and counsel personnel on personal or military-related matters.

DAFSC 912XD. The 23 members of the D-shred (11 percent of the survey sample) perform in the Research and Development Project Management job (21 percent) and the Environmental Protection Consultant and Management jobs (26 percent). They perform an average of 134 tasks and spend 21 percent of their job time performing project management tasks, 15 percent of their time performing research and development tasks, and 8 percent performing environmental protection tasks (Duties M, K, and I, see Table 5). Examples of tasks performed by this group include: prepare SOWs, review contractor's final report packages, define scope or technical boundaries of project, and prepare purchase request packages. A more comprehensive description of these "Environmental" Bioenvironmental Engineers can be found in Table 12.

Several tasks also helped distinguish 9121D from 9126D personnel. The key differences involve DAFSC 9121D officers spending a greater amount of time performing general administration tasks versus DAFSC 9126D officers spending a greater amount of their job time training and performing the top managerial functions. Examples of tasks with the greatest differences in members performing include DAFSC 9121D personnel verifying need for research and development projects, coordinating research programs, projects, or activities with related or interested agencies, defining research problems, and drafting trip reports. In contrast, DAFSC 9126D personnel review budgets or budget estimates, review installation restoration program projects, draft or write records of personnel counseling sessions, and review fund expenditures.

Comparison of the duty and specialty job performance between DAFSC 912XA, DAFSC 912XB, and DAFSC 912XD indicates major differences among the shreds. Further distinctions are also identified in the dissimilarity of the percent of shred members performing certain tasks. Tables 13, 14, and 15, respectively, show tasks that best distinguish the A- and B-shred groups, the A- and D-shred groups, and the B- and D-shred groups. As shown, tasks performed by a greater percentage of A-shred personnel include: evaluate requests for issue of hazardous materials, evaluate shop implementation of HazCom programs, and analyze ventilation and air sample data. The distinguishing tasks for the B-shred personnel include construct and maintain consultant project folders, advise base BEEs on industrial hygiene matters, analyze octave band noise levels, and develop recommendations to minimize noise hazards. Examples of distinguishing tasks for D-shred personnel include prepare SOWs, conduct project kick-off meetings, approve or disapprove SOWs, and prepare program schedules.

Summary

As expected, DAFSC 9121A/B/D officers spend time performing both technical and managerial tasks. While DAFSC 9126A/B/D officers do perform technical tasks, they spend more time with tasks involving supervisory and management responsibilities. This progression in responsibility is seen clearly between 9121 and 9126 officers within each shred. Major differences

TABLE 12

REPRESENTATIVE TASKS PERFORMED BY
DAFSC 912XD PERSONNEL
(N=23)

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
A48 Draft or write point, position, or talking papers	83
D227 Draft or write memoranda for record (MFR)	74
D263 Schedule and make arrangements for temporary duty (TDY) trips	74
A85 Present program briefings to visitors	74
D259 Research reference materials or technical publications	70
M940 Prepare SOWs	70
D225 Draft or write correspondence, such as letters or messages for electrical transmissions	70
M877 Approve or disapprove statement of work (SOWs)	70
A2 Advise commanders or staff agency personnel on matters, such as capabilities, procedures, or programs	70
D256 Proofread correspondence, forms, or reports	65
D231 Draft or write trip reports	65
D246 Participate in professional meetings or conferences	65
D233 Escort dignitaries, DVs, or visitors	65
A57 Evaluate effects of funding cuts on programs	65
M946 Review contractor's final report packages	61
M873 Approve or disapprove contractor's final report packages	61
M889 Coordinate with legal personnel or contracting officers on technical aspects of contracts, bids, or proposals	61
D264 Schedule conferences, meetings, or workshops	61
A53 Draft or write staff studies or staff summaries	61
D213 Conduct tours of facilities or equipment	61
D267 Type correspondence, reports, or forms	57
M890 Define scope or technical boundaries of project	57
D248 Plan meetings, conferences, or working groups, such as agendas, invitations, or follow-up actions	57
M867 Advise personnel on policies or procedures for handling contracting requirements	57
M953 Review SOWs	57
M882 Conduct project kick-off meetings	57
B95 Advise subordinates on unit policies or procedures	57
M915 Maintain or update program folders project files	52

TABLE 12 (CONTINUED)

REPRESENTATIVE TASKS PERFORMED BY
DAFSC 912XD PERSONNEL
(N=23)

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
C160 Conduct or participate in planning meetings	52
K771 Coordinate research programs, projects, or activities with related or interested agencies	52
M888 Coordinate with customers on receipt or nonreceipt of contract deliverables	52
M883 Coordinate final contractor reports with interested parties	52
M945 Review contract deliverables or informal technical information reports	48
D229 Draft or write scientific or professional papers	48
M935 Prepare purchase request packages	48
A24 Assign special projects to personnel for staffing actions	48
M907 Evaluate contractor's design proposals	48
A29 Coordinate policies or projects with higher headquarters personnel	48
M917 Participate in program review meetings	48
M926 Prepare cost estimates for projects or programs	48
M906 Evaluate contractor's compliance with contract terms	48

TABLE 13

REPRESENTATIVE TASK DIFFERENCES BETWEEN
DAFSC 912XA AND DAFSC 912XB PERSONNEL
(PERCENT MEMBERS PERFORMING)

<u>TASKS</u>		DAFSC 912XA (N=167)	DAFSC 912XB (N=12)	<u>DIFF</u>
G448	Evaluate requests for issue of hazardous materials	53	0	53
G366	Annotate or complete AF Forms 2758 (Industrial Hygiene Survey Data Sheet-General)	53	0	53
G449	Evaluate shop implementation of HazCom programs	53	0	53
N987	Develop recommendations for spill clean-up	51	0	51
G375	Approve or disapprove industrial hygiene case files	59	8	51
H522	Annotate or complete AF Forms 2759 (Radio Frequency Emitter Survey)	50	0	50
G401	Conduct post-survey reviews of industrial hygiene case files	49	0	49
N979	Conduct BEE response team training	49	0	49
N1011	Participate in base disaster response exercise	57	8	49
G367	Annotate or complete AF Forms 2761 (Hazardous Materials Data)	48	0	48
G512	Review IEX code M-15 computer listings, semiannual listings, stock number user directories, or cargo code listings	48	0	48
I716	Review results of laboratory tests	48	0	48
G368	Annotate or complete AF Forms 2762 (Listing of Industrial Hygiene Sample Results)	47	0	47
G369	Annotate or complete AF Forms 2763 (Industrial Hygiene Ventilation Presurvey)	47	0	47
G453	Identify controls to minimize exposure to airborne contaminants	55	8	47
N1012	Participate in Broken Arrow exercises	47	0	47
A31	Coordinate work order requests with civil engineering personnel	54	8	46
G379	Assign risk assessment codes (RAC)	53	8	45
H520	Analyze X-ray survey data	45	0	45
G413	Develop criteria for IEX code assignment	44	0	44
E287	Initiate corrective actions to resolve discrepancies identified in inspections or evaluations	43	0	43
H586	Perform RF surveys	43	0	43

TABLE 13 (CONTINUED)

**REPRESENTATIVE TASK DIFFERENCES BETWEEN
DAFSC 912XA AND DAFSC 912XB PERSONNEL
(PERCENT MEMBERS PERFORMING)**

<u>TASKS</u>	<u>DAFSC 912XA (N=167)</u>	<u>DAFSC 912XB (N=12)</u>	<u>DIFF</u>
D229 Draft or write scientific or professional papers	16	42	-26
J739 Perform environmental noise surveys	7	33	-26
M870 Annotate or complete AF Forms 9 (Request for Purchase)	15	42	-27
B123 Draft or write officer performance reports (OPRs)	38	67	-29
A66 Evaluate USAF publications	20	50	-30
C160 Conduct or participate in planning meetings	27	58	-31
L825 Analyze noise hazards for new weapon systems	1	33	-32
B122 Draft or write military job descriptions	16	50	-34
F298 Conduct formal classroom training	22	58	-36
J750 Select survey team members for consultation visits	14	50	-36
J736 Log telephone consultations into computer data base system	4	42	-38
D225 Draft or write correspondence, such as letters or messages for electrical transmissions	44	83	-39
J729 Develop procedures for performing new industrial hygiene surveys	25	67	-42
J720 Advise base BEEs on industrial hygiene matters	22	67	-45
J727 Construct and maintain consultant project folder	9	58	-49

TABLE 14

REPRESENTATIVE TASK DIFFERENCES BETWEEN
DAFSC 912XA AND DAFSC 912XD PERSONNEL
(PERCENT MEMBERS PERFORMING)

<u>TASKS</u>	<u>DAFSC 912XA (N=167)</u>	<u>DAFSC 912XD (N=23)</u>	<u>DIFF</u>
G355 Analyze ventilation data	62	0	62
G350 Analyze air sample data	62	0	62
G441 Evaluate industrial hygiene survey reports	60	0	60
G499 Review AF Forms 2755	59	0	59
G351 Analyze equivalent continuous levels (ECL) using noise dosimeters	59	0	59
G375 Approve or disapprove industrial hygiene case files	59	0	59
G498 Review AF Forms 2754	59	0	59
G423 Direct BES involvement in hazardous communication (HazCom) programs	58	0	58
G504 Review AF Forms 2762	57	0	57
G453 Identify controls to minimize exposure to airborne contaminants	55	0	55
A75 Participate in Air Force occupational safety and health council meetings	54	0	54
G450 Explain MSDSs	54	0	54
G458 Identify operational need for personal protection equipment	54	0	54
D235 Evaluate blueprints or plans for bioenvironmental engineering controls	58	4	54
G376 Approve or disapprove industrial hygiene inspection reports	53	0	53
G379 Assign risk assessment codes (RAC)	53	0	53
G448 Evaluate requests for issue of hazardous materials	53	0	53
G411 Develop air sampling strategies	53	0	53
A74 Participate in aerospace medicine council meetings	57	4	53
H522 Annotate or complete AF Forms 2759 (Radio Frequency Emitter Survey)	50	0	50
H556 Identify controls for RF hazards	50	0	50
D224 Draft or write articles for professional journals	11	48	-37
D233 Escort dignitaries, DVs, or visitors	27	65	-38
A57 Evaluate effects of funding cuts on programs	27	65	-38

TABLE 14 (CONTINUED)

REPRESENTATIVE TASK DIFFERENCES BETWEEN
DAFSC 912XA AND DAFSC 912XD PERSONNEL
(PERCENT MEMBERS PERFORMING)

<u>TASKS</u>	DAFSC 912XA (N=167)	DAFSC 912XD (N=23)	<u>DIFF</u>
M945 Review contract deliverables or informal technical information reports	9	48	-39
M883 Coordinate final contractor reports with interested parties	12	52	-40
M911 Evaluate results of contractor's systems operation pilot tests	3	43	-40
M889 Coordinate with legal personnel or contracting officers	20	61	-41
M926 Prepare cost estimates for projects or programs	7	48	-41
M934 Prepare program schedules	6	48	-42
M890 Define scope or technical boundaries of project	14	56	-42
M935 Prepare purchase request packages	5	48	-43
K771 Coordinate research programs, projects, or activities with related or interested agencies	9	52	-43
M888 Coordinate with customers on receipt or nonreceipt of contract deliverables	9	52	-43
M867 Advise personnel on policies or procedures for handling contracting requirements	13	56	-43
M882 Conduct project kick-off meetings	13	56	-43
M915 Maintain or update program folders project files	7	52	-45
M873 Approve or disapprove contractor's final report packages	13	61	-48
M946 Review contractor's final report packages	10	61	-51
M877 Approve or disapprove statement of work (SOWs)	17	69	-52
M940 Prepare SOWs	16	70	-53

TABLE 15

REPRESENTATIVE TASK DIFFERENCES BETWEEN
DAFSC 912XB AND DAFSC 912XD PERSONNEL
(PERCENT MEMBERS PERFORMING)

<u>TASKS</u>	<u>DAFSC 912XB (N=12)</u>	<u>DAFSC 912XD (N=23)</u>	<u>DIFF</u>
J729 Develop procedures for performing new industrial hygiene surveys	67	0	67
J720 Advise base BEEs on industrial hygiene matters	67	4	62
G350 Analyze air sample data	50	0	50
G351 Analyze equivalent continuous levels (ECL) using noise dosimeters	42	0	42
G354 Analyze octave band noise levels	42	0	42
G411 Develop air sampling strategies	42	0	42
G420 Direct air sampling surveys	42	0	42
G428 Direct noise surveys	42	0	42
G441 Evaluate industrial hygiene survey reports	42	0	42
J750 Select survey team members for consultation visits	50	9	41
F298 Conduct formal classroom training	58	17	41
G383 Collect air samples	42	5	37
G355 Analyze ventilation data	33	0	33
G357 Analyze weighted noise levels	33	0	33
G381 Calibrate air sampling pumps	33	0	33
G417 Develop recommendations to minimize noise hazards	33	0	33
G440 Evaluate in-door air quality	33	0	33
J739 Perform environmental noise surveys	33	0	33
L825 Analyze noise hazards for new weapon systems	33	0	33
J736 Log telephone consultations into computer data base system	42	9	33
A67 Implement Air Force Total Quality Management (TQM) Program	50	17	33
D235 Evaluate blueprints or plans for bioenvironmental engineering controls	33	4	29
M929 Prepare documents to transfer funds from other government	0	39	-39
I717 Review site characterizations	0	39	-39
K788 Evaluate research results	0	39	-39
K789 Identify research requirements	0	39	-39
M874 Approve or disapprove inputs to source selection plans, such as evaluation criteria	0	39	-39
M905 Evaluate bidder responses to Commerce Business Daily	0	39	-39

TABLE 15 (CONTINUED)

REPRESENTATIVE TASK DIFFERENCES BETWEEN
DAFSC 912XB AND DAFSC 912XD PERSONNEL
(PERCENT MEMBERS PERFORMING)

<u>TASKS</u>	DAFSC 912XB (N=12)	DAFSC 912XD (N=23)	<u>DIFF</u>
M906 Evaluate contractor's compliance with contract terms	8	48	-40
M934 Prepare program schedules	8	48	-40
M935 Prepare purchase request packages	8	48	-40
M911 Evaluate results of contractor's systems operation pilot tests	25	65	-40
K810 Prepare justification for programs, projects, or systems for award of funds	0	43	-43
M883 Coordinate final contractor reports with interested parties	8	52	-44
M888 Coordinate with customers on receipt or nonreceipt of contract deliverables	8	52	-44
M946 Review contractor's final report packages	17	61	-44
M940 Prepare SOWs	25	70	-45
M907 Evaluate contractor's design proposals	0	48	-48
M873 Approve or disapprove contractor's final report packages	8	61	-53
M877 Approve or disapprove statement of work (SOWs)	8	69	-61

between A, B, and D shreds were also identified. DAFSC 912XA personnel are involved primarily with the base BEE responsibilities. DAFSC 912XB personnel are involved with the more specialized industrial hygiene activities such as consulting and training. Finally, DAFSC 912XD personnel are performing as project managers for environmental and research and development programs.

ANALYSIS OF AFR 36-1 SPECIALTY DESCRIPTIONS

The results of the DAFSC and job structure analysis were compared with the AFR 36-1 Specialty Descriptions, dated 31 October 1990, for the BEE utilization field. The descriptions in AFR 36-1 describe, in broad terms, the tasks and duties performed by members of the utilization field.

These broad descriptions for 912X personnel are generally accurately reflected by the findings of this survey. All major jobs are described within AFR 36-1; however, the regulation does define functions which were not covered in the job inventory. These areas were related to BEE aspects and architecture of medical facilities. Overall, the descriptions depict the technical aspects of the job, as well as the major jobs identified in the work structure analysis.

TRAINING ANALYSIS

Occupational survey data provide one of several sources of information which can be used to make training programs more relevant and meaningful to students. The most commonly used types of occupational survey information are: (1) the percent of first-assignment personnel performing tasks covered in the job inventory, and (2) the ratings of relative emphasis which should be placed on tasks for first-assignment training. These data can be used in examining training documents, such as Course Training Standards (CTS) and the Plans of Instruction (POI).

To aid in the examination of the 912X course training documents, personnel at the USAF School of Aerospace Medicine, Brooks AFB, matched job inventory tasks to appropriate sections of the CTS and POI. With these matchings, comparisons of survey data to the training documents were accomplished. A complete computer listing displaying percent members performing tasks and TE ratings for each task, along with CTS and POI matchings, has been forwarded to the school for its use in further detailed reviews of training documents.

Training Emphasis (TE)

TE ratings are a task factor that can assist technical school personnel in deciding what tasks should be emphasized in entry-level training. TE ratings provided by career ladder subject-matter experts (SMEs) yielded an average rating of 2.24, with a standard deviation of 1.82. Therefore, tasks having a rating of 4.06 (average TE + 1 standard deviation) or better are considered highly recommended for structured training. For a complete discussion of TE, please refer back to the Task Factor Administration section of this report.

Tasks having the highest TE ratings are listed in Table 16. Table 16 includes, for each task, the percentage of base BEE personnel performing. As illustrated in Table 16, these tasks pertain to technical functions within the specialty. A majority of these tasks fall into the duty of performing industrial hygiene tasks with others relating to performing bioenvironmental engineering readiness activities. In addition, several of these tasks are performed by substantial percentages of base BEE personnel.

While reviewing this section of the report, note that tasks performed by moderate to high percentages of personnel (20 percent or better) in the base BEE group may justify resident course training. TE ratings, composed of the opinions of experienced utilization field personnel, are a secondary factor that may assist training developers in deciding which tasks should be emphasized for training. Those tasks receiving high task factor ratings, but performed by low percentages of base BEE personnel, may be more appropriately planned for OJT programs within the utilization field. Low TE ratings may highlight tasks best left out of training for new personnel. Training decisions are not only weighed against these factors, but should be influenced by many other considerations including command concerns, safety standards, and criticality of the tasks.

Review of Course Training Standard (CTS)

A comprehensive review of the tentative CTS 912X, BEE course, B30BY9121-00 dated October 1990 is made by comparing CTS elements to survey data. CTS line items with performance elements are reviewed in terms of TE and percent members performing information as stipulated in ATCR 52-22, dated 17 February 1989. The guidance provided in ATCR 52-22 has successfully directed several ATC training program revision efforts. AFSC training managers may wish to consider using guidance provided within this regulation when reviewing the training documents. CTS elements containing general utilization field knowledge and information are not reviewed. Tasks performed by 20 percent or more of personnel in the base BEE group was used as the criteria and should be considered for inclusion in the CTS. Likewise, tasks with less than 20 percent performing by this group should be considered for deletion from the CTS.

Overall, 111 out of 237 CTS elements with subject-knowledge codes indicate that TE and percent members performing for these elements support possible increase in proficiency level or a review of the course content within the present code. Table 17 shows examples, with 50 percent of the tasks matched being above average in TE ratings.

TABLE 16

TASKS RATED HIGHEST IN TRAINING EMPHASIS (TE) FOR BASE BEE PERSONNEL
(GREATER THAN 2 STANDARD DEVIATION ABOVE THE AVERAGE)

TASKS		TNG EMPH*	PERCENT MEMBERS PERFORMING BASE BEE PERSONNEL (N=108)
G350	Analyze air sample data	6.93	92
G409	Determine air sampling tactics, such as collection methods, volume, and air flow rate	6.88	72
G411	Develop air sampling strategies	6.81	79
G433	Draft or write industrial hygiene survey reports	6.79	71
G355	Analyze ventilation data	6.53	91
G351	Analyze equivalent continuous levels (ECL) using noise dosimeters	6.42	89
G383	Collect air samples	6.28	68
G408	Construct and maintain industrial hygiene case files	6.23	55
G453	Identify controls to minimize exposure to airborne contaminants	6.23	81
N1012	Participate in Broken Arrow exercises	6.23	68
G378	Assign IEX codes	6.14	73
G490	Perform theoretical calculations to estimate air exposures	6.05	63
H533	Calculate power density and radio frequency (RF) hazard distance	6.02	65
N962	Advise on-scene commander of PPE requirements or evacuation and shelters zones	6.02	79
G379	Assign risk assessment codes (RAC)	6.00	82
H557	Identify controls for X-ray hazards	5.98	68
N972	Calculate airborne radiation levels	5.98	57
N1011	Participate in base disaster response exercise	5.98	84
G413	Develop criteria for IEX code assignment	5.93	67
G423	Direct BES involvement in hazardous communication (HazCom) programs	5.93	87
G441	Evaluate industrial hygiene survey reports	5.93	91
G389	Collect ventilation data using face velocity method	5.91	69
N1023	Prepare and maintain BEE response team checklists in support of OPLANS, DCCP, and CSP	5.88	62

* Average Training Emphasis = 2.24 with SD of 1.82 (High = 4.06)

Table 18 reveals a number of tasks matched to knowledge and performance elements in the CTS had high percent members performing and above average in TE, but are not being taught to the performance level in the POI. Examples of CTS performance elements that are not referenced to the POI and are not being trained are shown in Table 19.

Additional review of the CTS revealed that some line elements could possibly be combined with other elements within the CTS, with the element reflecting the highest proficiency level code.

Review of Tasks Not Referenced section of the CTS revealed a number of technical tasks with above average TE and high percent members performing. These should be reviewed to determine whether or not they should be included in the CTS. Some examples of these tasks are found in Table 20.

Review of Plan of Instruction (POI)

Based on assistance from USAF School of Aerospace Medicine SMEs in matching job inventory tasks to POI 30BY9121-000, dated August 1988, occupational survey data were matched to related training objectives. A similar method to that of the CTS analysis was employed to review the POI. The specific data examined included percent members performing and TE ratings for base BEE personnel

An in-depth review of the POI revealed several discrepancies with the CTS references. Many of the POI elements were not referenced and did not reflect what the CTS said needed to be trained.

Table 21 shows tasks found in the POI with low percent members performing and above average TE that should be reviewed to determine if this area should be deleted from the basic course.

Review of the Tasks Not Referenced section of the POI revealed several technical tasks high in percent members performing and TE that should be considered for inclusion in the POI. Table 22 shows examples of such tasks.

Training personnel are encouraged to review the computer printouts of the POI matched with survey data as they undertake future revisions of the POI.

TABLE 17

**EXAMPLES OF CTS SUBJECT-KNOWLEDGE ELEMENTS WITH MORE THAN 50
PERCENT OF THE MATCHED TASKS RATED ABOVE AVERAGE IN TE**

<u>Element</u>	<u>Number of Tasks Matched to CTS</u>	<u>Number of Tasks Above Average in TE</u>
3d(5) Issue Exception Codes	7	5
3d(6). Hazard Communication	6	5
3K. Asbestos	10	10
7b(4). RF Measurement Instrumentation	11	8
9a. Water Supply Consideration	8	7
10a(3). Noise Assessment	15	12
11i. X-Ray Survey Responsibilities and Procedures	10	10
13e. Hazardous Waste Management and Sampling	28	21
16b. BEE Responsibilities in Contingencies	21	21
16h. Nuclear, Biological, Chemical Hazard Detection/Monitoring	13	13

TABLE 18

**AFSC 912X CTS PERFORMANCE ITEM ELEMENTS WITH TASKS
NOT MATCHED TO THE POI**

<u>CTS LINE ITEM/REPRESENTATIVE TASKS</u>		<u>TE*</u>	<u>PMP BASE BEE</u>
<hr/>			
7b(6) Apply RF Radiation Physics Standard 3c			
<hr/>			
H571	Investigate RF overexposure	5.63	52
H556	Identify controls for RH hazard	5.56	74
H546	Direct RF hazard evaluations	5.02	73
H566	Inventory RF emitters	4.42	63
<hr/>			
10b(5) Apply Noise Control Physics and Criteria 3c			
<hr/>			
G351	Analyze equivalent continuous level (ECL) using noise dosimeters	6.42	89
G357	Analyze weight noise level	5.40	79
G385	Collect equivalent continuous level (ECL) using noise dosimeters	5.33	42
G382	Classify industrial shops as hazardous noise areas	5.12	72
G354	Analyze octave band noise levels	4.95	65
G428	Direct noise surveys	4.28	81
<hr/>			
10b(7) Analyze Noise Control 3c			
<hr/>			
G417	Develop recommendations to minimize noise hazards	5.19	71
G353	Analyze impact noise levels	4.84	69
G364	Annotate or complete AF Form 2756 (Noise Survey Dosimeter)	4.67	71
G388	Collect octave band noise levels	4.35	37
G428	Direct noise surveys	4.28	81

* Average Training Emphasis = 2.24 with SD of 1.82

TABLE 18 (CONTINUED)

AFSC 912X CTS PERFORMANCE ITEM ELEMENTS WITH TASKS
NOT MATCHED TO THE POI

<u>CTS LINE ITEM/REPRESENTATIVE TASKS</u>		<u>TE*</u>	<u>PMP BASE BEE</u>
<hr/>			
19a. Conduct an Industrial Hygiene Survey 3c			
<hr/>			
G389	Collect ventilation data using face velocity method	5.91	69
G390	Collect ventilation data using pilot traverse method	5.74	46
G385	Collect equivalent continuous level (ECL) using noise dosimeters	5.33	42
G375	Approve or disapprove industrial hygiene case files	5.21	89
G384	Collect bulk samples	5.19	65
G370	Annotate or complete AF Form 2764 (Industrial Ventilation Survey Face Velocity Method)	4.86	73
G376	Approve or disapprove industrial hygiene inspection reports	4.72	83
G371	Annotate or complete AF Forms 2765 (Industrial Ventilation Survey Pitot Traverse)	4.60	61
G369	Annotate or complete AF Form 2763 (Industrial Hygiene Ventilation PreSurvey)	4.33	71
G499	Review AF Form 2755	3.88	90

* Average Training Emphasis = 2.24 with SD of 1.82

TABLE 19

CTS PERFORMANCE ELEMENTS WITH NO TASKS MATCHED TO THE POI

- 2e. Apply Environmental Chemistry Principles**
- 2f(2). Apply Gas Law Principles**
- 2h. Apply Statistical Principles**
- 3c(2). Recognize Potential Hazards**
- 3d(4). Risk Assessment Principles**
- 3e(10). Use Direct-Reading Instruments**
- 6a(3). Design Dilution Flow Requirements**
- 6a(5). Design Local Exhaust Requirements**
- 11n. Apply Ionizing Radiation Physics, Regulations, and Principles**

TABLE 20

**EXAMPLES OF TASKS PERFORMED BY 20 PERCENT OR MORE
AND ABOVE AVERAGE IN TRAINING EMPHASIS NOT REFERENCED TO THE CTS**

<u>TASKS</u>		<u>PERCENT MEMBERS PERFORMING BASE BEE</u>	<u>TNG EMP*</u>
A71	Investigate problems, such as incidents or complaints	82	4.40
A41	Direct bioenvironment engineering evaluations	81	5.70
A69	Interpret data trend analysis	67	3.88
G436	Evaluate chemical hygiene plans	54	4.74
G464	Inspect emergency shower and eye wash facilities	49	3.02
N978	Conduct BEE Mobility training	40	4.21
I644	Direct storm water surveys	38	2.98
I648	Evaluate atmospheric explosive levels	33	3.79
F297	Conduct environmental safety equipment or environmental health hazards training sessions	33	2.98
H597	Review radon survey forms	29	2.84

* Average Training Emphasis = 2.24 with SD of 1.82 (high = 4.06)

TABLE 21

TASKS LOW IN PERCENT MEMBERS PERFORMING AND ABOVE AVERAGE
IN TE FOUND IN THE POI IN NEED OF REVIEW

		PERCENT MEMBERS PERFORMING <u>BASE BEE</u>	<u>TE</u>
<hr/>			
I 6b(6). Select Respirators (8)			
<hr/>			
G403	Conduct respiratory protection fit test	23	5.21
G405	Conduct respiratory protection training, except for self-contained breathing apparatus (SCBA)	20	4.42
G407	Conduct training for workplace respiratory protection	15	4.14
G406	Conduct SCBA training	8	3.19

TABLE 22

EXAMPLES OF TASKS PERFORMED BY 30 PERCENT OR MORE
AND ABOVE AVERAGE IN TRAINING EMPHASIS NOT
REFERENCED TO THE POI

<u>TASKS</u>		<u>PERCENT MEMBERS PERFORMING BASE BEE</u>	<u>TNG EMP*</u>
G441	Evaluate industrial hygiene survey reports	91	5.93
G351	Analyze equivalent continuous levels (ECL) using noise dosimeters	89	6.42
N1011	Participate in base disaster response exercise	84	5.98
N979	Conduct BEE response team training	74	5.77
H556	Identify controls for RF hazards	74	5.56
N987	Develop recommendations for spill cleanup	69	5.51
H517	Analyze radioactive material exposure data	65	5.72
N982	Determine PPE requirements or evaluation and shelter zones	62	5.77
H555	Identify controls for radioactive material handling	56	5.51
N983	Determine surface contamination	49	5.37

* Average Training Emphasis = 2.24 with SD of 1.82 (high = 4.06)

JOB SATISFACTION ANALYSIS

Comparisons of group perceptions of their jobs provide career ladder managers with a means toward understanding some of the factors affecting job performance. These perceptions are gathered from incumbents' responses to four job satisfaction questions covering job interest, perceived utilization of talents, perceived utilization of training, and a sense of accomplishment. The responses of the current survey sample are then analyzed by making several comparisons: (1) among TAFMS groups of a comparative sample of personnel from other Medical specialists surveyed in 1991 (AFSCs 907X0, 902X0A/B), (2) between total sample of DAFSC, and (3) across specialty job groups identified in the SPECIALTY JOBS section of this report.

First-job, 1-48 months TAFMS, 49-96 months TAFMS, and 97+ months TAFMS group data are listed in Table 23 and are compared to enlistment groups from other Medical AFSCs surveyed in 1991. These data give a relative measure of how the job satisfaction of AFSC 912X personnel compares with that of other similar Air Force specialties. Generally, the officer groups of the DAFSC 912X sample indicate slightly higher levels of job satisfaction than do those of the comparative sample. This is demonstrated particularly in the areas of job interest and sense of accomplishment by all TAFMS groups. Utilization of talents and utilization of training both being comparable.

The job satisfaction indicators reported among the total sample were similar for both the 912XAs, Bs, and Cs. Job interest and sense of accomplishment were high, with greater than 65 percent of each shred responding positive. Utilization of talent and utilization of training for the 912XA, 912XB, and 912XD range between excellent to very well. Job satisfaction results for the 912XA, 912XB and 912XCs are found in Table 24.

Table 25 presents job satisfaction data for the speciality jobs identified in the career ladder structure for AFSC 912XA/B/D. An examination of this data can reveal the influences performing certain jobs may have on overall job satisfaction. Job satisfaction indicators for the specialty job groups suggest members across the utilization field are generally content. Personnel in all the jobs responded with high levels of satisfaction. Over 75 percent of the personnel in each of the utilization field jobs rated their job as "interesting," except for the five personnel in the Basic Research job. Similarly, respondents in all but one of the major jobs also indicated high to medium perceived use of talent and training. Three out of the five personnel found in the Basic Research job perceived use of talent and training to be none to very little. As a whole, members in the Training cluster reflect the highest levels of satisfaction when compared to the other jobs. One hundred percent of these members expressed high job interest and "Fairly Well to Perfect" use of talents and training. Finally, utilization field intentions are also high for all major specialty jobs, with greater than 40 percent of each cluster responding with positive plans to reenlist.

TABLE 23

COMPARISON OF JOB SATISFACTION DATA BY 912X AND
COMPARATIVE SAMPLE GROUPS*
(PERCENT MEMBERS RESPONDING)

	<u>1-48 MOS TAFMS</u>		<u>49-96 MOS TAFMS</u>		<u>97+ MOS TAFMS</u>	
	1991		1991		1991	
	912XA/B/D (N=52)	COMP SAMPLE (N=1,197)	912XA/B/D (N=50)	COMP SAMPLE (N=1,020)	912XA/B/D (N=100)	COMP SAMPLE (N=1,196)
<u>EXPRESSED JOB INTEREST:</u>						
INTERESTING	92	79	88	75	91	80
SO-SO	6	13	6	16	3	13
DULL	0	8	2	9	5	7
<u>PERCEIVED USE OF TALENTS:</u>						
EXCELLENT TO PERFECT	15	15	28	13	43	22
FAIRLY TO VERY WELL	77	66	66	67	47	61
NONE TO VERY LITTLE	8	19	4	20	10	17
<u>PERCEIVED USE OF TRAINING:</u>						
EXCELLENT TO PERFECT	13	17	28	14	38	19
FAIRLY TO VERY WELL	65	68	58	65	49	59
NONE TO VERY LITTLE	21	15	12	21	13	21
<u>SENSE OF ACCOMPLISHMENT FROM WORK:</u>						
SATISFIED	83	74	84	72	76	72
NEITHER	6	11	4	11	4	9
DISSATISFIED	12	14	10	17	20	19

* Columns may not add to 100 percent due to nonresponse and rounding

** Comparative sample is composed of Medical AFSCs surveyed in 1991 (includes AFSCs 907X0, 902X0A/B)

TABLE 24

**JOB SATISFACTION INDICATORS AMONG TOTAL SURVEY SAMPLE
(PERCENT MEMBERS RESPONDING)***

	912XA (N=167)	912XB (N=12)	912XD (N=23)
<u>EXPRESSED JOB INTEREST:</u>			
INTERESTING	90	83	96
SO-SO	2	0	4
DULL	5	17	0
<u>PERCEIVED USE OF TALENTS:</u>			
EXCELLENT TO PERFECT	31	42	35
FAIRLY TO VERY WELL	60	42	65
NONE TO VERY LITTLE	8	17	0
<u>PERCEIVED USE OF TRAINING:</u>			
EXCELLENT TO PERFECT	28	42	35
FAIRLY TO VERY WELL	57	42	48
NONE TO VERY LITTLE	14	17	17
<u>SENSE OF ACCOMPLISHMENT:</u>			
SATISFIED	80	67	83
NEITHER	5	8	0
DISSATISFIED	14	25	17

* Columns may not add to 100 percent due to nonresponse and rounding

TABLE 25

**JOB SATISFACTION INDICATORS AMONG SPECIALTY JOBS
(PERCENT MEMBERS RESPONDING)***

	BASIC BASE BEE JOB (N=5)	CHIEF BASE BEE JOB (N=79)	CHIEF NON-RAD BASE BEE JOB (N=5)	BASE BEE MGT JOB (N=6)	IH CONSULT JOB (N=6)	EP CONSULT JOB (N=5)
<u>EXPRESSED JOB INTEREST:</u>						
INTERESTING	100	95	100	100	100	80
SO-SO	0	5	0	0	0	0
DULL	0	0	0	0	0	20
<u>PERCEIVED USE OF TALENTS:</u>						
EXCELLENT TO PERFECT	60	29	20	50	17	0
FAIRLY TO VERY WELL	20	67	80	50	83	80
NONE TO VERY LITTLE	20	4	0	0	0	20
<u>PERCEIVED USE OF TRAINING:</u>						
EXCELLENT TO PERFECT	60	25	0	67	17	0
FAIRLY TO VERY WELL	0	70	80	33	83	80
NONE TO VERY LITTLE	40	5	20	0	0	20
<u>SENSE OF ACCOMPLISHMENT</u>						
SATISFIED	100	82	80	100	67	20
NEITHER	0	4	0	0	17	20
DISSATISFIED	0	14	20	0	17	60

* Columns may not add to 100 percent due to nonresponse and rounding

TABLE 25 (CONTINUED)

**JOB SATISFACTION INDICATORS AMONG SPECIALTY JOBS
(PERCENT MEMBERS RESPONDING)***

	EP MGT JOB (N=8)	PROJECT- CONTRACT MGT JOB (N=8)	BASIC RESEARCH JOB (N=5)	R & D PROJ MGT JOB (N=5)	T & E PROJ MGT JOB (N=5)	MAJCOM/ STAFF OFFICER JOB (N=6)
<u>EXPRESSED JOB INTEREST:</u>						
INTERESTING	75	88	40	80	100	100
SO-SO	0	0	40	0	0	0
DULL	25	13	0	20	0	0
<u>PERCEIVED USE OF TALENTS:</u>						
EXCELLENT TO PERFECT	63	50	40	20	20	33
FAIRLY TO VERY WELL	13	50	0	60	80	67
NONE TO VERY LITTLE	25	0	60	20	0	0
<u>PERCEIVED USE OF TRAINING:</u>						
EXCELLENT TO PERFECT	63	50	40	40	20	33
FAIRLY TO VERY WELL	0	50	0	40	60	67
NONE TO VERY LITTLE	38	0	60	20	20	0
<u>SENSE OF ACCOMPLISHMENT</u>						
SATISFIED	63	88	60	80	100	83
NEITHER	13	0	20	0	0	0
DISSATISFIED	25	13	20	20	0	17

* Columns may not add to 100 percent due to nonresponse and rounding

ANALYSIS OF MAJOR COMMANDS (MAJCOM)

Occupational survey data can be used in examining differences in duty and task performance data across major commands. Highlighting these differences may identify any specific needs MAJCOMs may have due to distinguishing performance functions. The inventory was returned from the field before any changes in the major commands took place, so the analysis reflects the old MAJCOMs. Generally, the job descriptions for the MAJCOMs are basically the same, however, minor differences were noted. Table 26 relates these differences.

The primary concentration of BEEs personnel, 34 percent of the total sample were located in Air Force Logistics Command (AFLC) and Air Force Space Command (AFSC). Personnel in 8 out of the 13 MAJCOMs examined (ATC, MAC, PACAF, SAC, TAC, AFLC, USAFE and AFSPACECOM) spent most of their time performing Industrial Hygiene related tasks. The highest was ATC with 41 percent of job time spent on these tasks. The 17 officers assigned to the Air Force Civil Engineering Support Agency and the Air Force Center of Environmental Excellence spent a total of 63 percent of their time on performing project management tasks. The officers in the 12 other MAJCOMs spend slightly over an average of 3 percent of their job performing this duty. Personnel in Air University (AU) spend 25 percent of their time and personnel in Air Force Civil Engineering Support Agency (AFCEA) spend 23 percent of their time on research and development, which was found to be much higher than the other MAJCOMs. As expected, HQ USAF indicated 45 percent of their job time was spent performing tasks in the area of command and management.

ANALYSIS OF CONUS VERSUS OVERSEAS GROUPS

Comparisons were made between the tasks performed and the background data for DAFSC 912X personnel assigned to the continental United States (CONUS, N=173) versus those assigned overseas (N=28). An examination of the tasks and duties performed by the two groups indicates only minor differences exists in equipment operated and number of tasks performed.

A review of the average number of tasks performed by these 2 groups indicates that overseas personnel tend to perform slightly more tasks (265 tasks) than their CONUS counterparts (206 tasks).

In general, overseas personnel recorded that they spent most of their time (54 percent) performing industrial hygiene related tasks, and spent slightly more time performing BEE readiness and radiological health related tasks than their CONUS counterparts. A few pieces of equipment are operated by a higher percentage of overseas members, mostly equipment used to collect industrial hygiene sampling. Examples of equipment used by more overseas specialists than CONUS specialists include Coliwasa, Air Sampling Devices (Ecoluzer, Ametack/Dupont Alpha 1, Respirable Dust Samplers) and Membrane Filters. Comparisons of general background

TABLE 26

DAFSC 912XA/B/D MAJCOM COMPARISONS

<u>DUTIES</u>	HQ						
	USAFE (N=13)	AFLC (N=25)	AFSC (N=44)	ATC (N=12)	AU (N=7)	USAF (N=6)	MAC (N=21)
A Command and Management	16	17	13	11	12	45	11
B Personnel	9	11	4	4	2	6	5
C Resource Management	3	7	4	2	1	8	2
D General Administration	9	11	18	8	14	26	9
E Inspection and Evaluation	4	3	1	3	1	3	2
F Training	1	3	8	1	7	1	1
G Performing Industrial Hygiene Tasks	26	26	9	41	12	*	38
H Performing Radiological Health Tasks	14	4	2	10	13	*	11
I Performing Environmental Protection Tasks	6	5	7	9	7	2	13
J Consulting Tasks	1	2	6	1	1	1	1
K Performing Research and Development Tasks	*	*	7	*	25	2	*
L Performing Test and Evaluation Tasks	*	*	4	*	*	2	*
M Performing Project Management Tasks	*	4	14	*	2	3	*
N Performing Bioenvironmental Engineering Readiness Tasks	10	5	2	9	3	1	6

* Less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding

TABLE 26 (CONTINUED)

DAFSC 912XA/B/D MAJCOM COMPARISONS

<u>DUTIES</u>	PACAF (N=10)	SAC (N=15)	TAC (N=16)	AF SPACECOM (N=6)	AFCEA (N=7)	AF CTR ENV EXT (N=10)
A Command and Management	11	9	15	17	9	23
B Personnel	3	4	5	3	4	7
C Resource Management	2	1	2	7	8	*
D General Administration	7	8	9	11	25	14
E Inspection and Evaluation	3	3	4	3	*	*
F Training	*	1	2	2	*	1
G Performing Industrial Hygiene Tasks	31	37	33	22	*	*
H Performing Radiological Health Tasks	14	12	11	6	*	*
I Performing Environmental Protection Tasks	16	13	10	8	1	9
J Consulting Tasks	1	2	1	2	*	1
K Performing Research and Development Tasks	*	*	*	1	23	5
L Performing Test and Evaluation Tasks	*	*	*	1	1	1
M Performing Project Management Tasks	1	*	1	11	28	35
N Performing Bioenvironmental Engineering Readiness Tasks	8	9	6	6	*	*

* Less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding

data reveal no real differences in characteristics between the two groups. Overseas personnel averaged 8 years TAFMS versus CONUS personnel having higher than 10 years time in service. But, both groups have an average paygrade of Captain. Job satisfaction indicators are also similar. Greater than 50 percent of each group responded positively to the four job satisfaction indicators.

SPECIAL ISSUES

During the survey process, information can be gathered to address items of concern to the training managers. AFSC 912X training managers were particularly interested in personnel perceptions of areas needing additional training and special courses completed by the 912X officer in the last 3 years.

Career ladder members were asked to indicate areas in which they felt additional training could benefit them based on current job responsibilities. Using a list of training areas, participants responded by marking the applicable areas. Table 27 lists the areas needing training, as indicated by AFSC 912X personnel groups. Greater than 16 percent of all 202 Bioenvironmental Engineers responding to the survey indicated 10 areas, such as computer operations, environmental law, contracting project officer skills, plus other additional areas of training.

There were 17 special courses that 912XA/B/C personnel attended in the last 3 years. The BEE Symposium, Installation Restoration Program (AFIT), and the American Industrial Hygiene Convention (AIHA) had the highest attendance, with the other special courses attended found in Table 28.

The 912X personnel are not offered any formal advance training classes after attendance of the basic BEE course. The data gathered by the job inventory could provide training managers with additional information when they start establishing some mini courses for the Bioenvironmental Engineering Officer.

TABLE 27

**AREAS THAT 912XA/B/D FEEL THEY NEED ADDITIONAL TRAINING IN
(PERCENT MEMBERS RESPONDING)**

	912XA/B/D (N=202)
Environmental Law	59
Health Risk Assessment	55
Computer Systems Operations	52
Contracting Project Officer Skills	46
Personnel Management	40
Statistics	30
Communications Theory and Practice	21
Media Relations	20
Lab Safety	17
Business Principles	16
Other	6

TABLE 28

**COURSES COMPLETED BY 912XA/B/D PERSONNEL
IN THE LAST 3 YEARS
(Percent Members Responding)**

<u>COURSES</u>	<u>912XA/B/D (N=202)</u>
Bioenvironmental Engineering Symposium (SAM)	61
Installation Restoration Program (AFIT)	25
American Industrial Hygiene Convention (AIHA)	25
Asbestos Inspector Training	19
Environmental Compliance Assessment & Management Program (AFIT)	17
Health/Risk Assessment Course (ATSDR)	16
Nuclear Hazards Training Courses (ATC)	16
HAZWOPER Course	14
Asbestos Contractor/Supervisor Refresher	13
Laser Hazard Assessment (SAM)	12
Advanced Bioenvironmental Engineering (SAM)	9
Industrial Hygiene Certification Review (AIHA)	8
Bioenvironmental Engineering Readiness	7
Review of Industrial Hygiene Certification	7
Hazardous Waste Management Program (AFIT)	5
Nuclear Emergency Team Operations (ATC)	5
Asbestos Inspectors Refresher	5

IMPLICATIONS

The primary purpose of this OSR is to assist in the evaluation and update of training requirements for the 912X Bioenvironmental Engineers.

Analysis of the 912X utilization field structure identified 12 jobs. Most members of the 912X utilization field do not perform in only one program, but perform tasks related to several different technical programs and require a range of different skills and knowledge. The consultant job and the basic research and development jobs were the only two that had members performing specific tasks.

The AFR 39-1 specialty descriptions for the Bioenvironmental Engineer specialty were analyzed to determine the adequate coverage of the utilization field. Overall, the findings of this survey provided accurate and comprehensive coverage of the duties of the 912X.

Analysis of the training documents revealed that both the CTS and POI need extensive review. Training personnel possibly should look at all areas of the CTS and POI for revisions to include changes in proficiency codes, additions to cover high performance and TE tasks currently not referenced to the CTS or POI, as well as possible deletions because of low percentages and TE.

The examination of responses to job satisfaction questions revealed that satisfaction for job interest and sense of accomplishment is high, while ratings for utilization of training and utilization of talents are somewhat lower across DAFSC and specialty jobs. Special issues, including what the 912XA/B/D survey sample would like additional training in and what courses they had attended in the last 3 years, were reported. This analysis revealed that possible additions of short formal courses for the officers may be warranted and beneficial to the continued changes in the bioenvironmental field.

The findings of this OSR come directly from data collected from a sample of 202 912XA/B/Ds worldwide. The outcome from this study is available to training and utilization personnel, plus other interested parties having the need for such information. These data will provide an excellent tool in the process of all training and utilization decisions.

APPENDIX A

**SELECTED REPRESENTATIVE TASKS PERFORMED BY
UTILIZATION FIELD SPECIALTY JOB GROUPS**

TABLE I

**BASIC BASE BEE JOB
(STG91)**

OF PEOPLE IN GROUP: 5
% OF TOTAL SAMPLE: 2.5%

% ASSIGNED CONUS: 100%
MAJCOM: 40% AFLC, 40% MAC, 20% ATC

AVERAGE TAFMS: 46 months
AVERAGE TIUF: 16 months
AVERAGE PAYGRADE: O-2

AVERAGE # OF TASKS: 178
AVERAGE # PERSONS SUPERVISE: 1

FUNCTIONAL AREA: Industrial Hygiene Programs

TYPE OF IH SURVEYS PERFORMED/REVIEW: Administrative Area
Annual Industrial Area
Baseline Industrial Area
Periodic Industrial Area
Special

COMPUTER PROGRAMS USED: ASIMS BEEKEEPER
HMIS PHOENIX
IEX LOCALLY DEVELOPED PROGRAMS

SUPPORT EQUIPMENT USED: Bacteriological Water Test Kits, Millipore (EP)
DPD Kits (chlorine/pH Analysis), Hach
Membrane Filters
Microscopes
PCB Screening Kits, Chlor-N-Oil
pH/Chlorine Test Strips
pH Meters, Hach
Refrigerators
Rubber Aprons/Gloves
Samplers, Millipore
Air Sampling Collection Devices, Bubblers/Impingers (IH)
Air Sampling Collection Devices, Filters (37mm, 0.8um)
Air Sampling Collection Device, Respirable Dust Samplers
Air Sampling Collection Devices, Tube/charcol, silica gel
Air Sampling pumps, Ametek/Dupont Alpha 1
Air Sampling pumps, Ametek/Dupont Alpha 2
Air Sampling pumps, Ametek/Dupont P-200
Air Sampling pumps, Ametek/Dupont P-4000

TABLE I (CONTINUED)

**BASIC BASE BEE JOB
(STG91)**

Air Sampling pumps, Gilian
Air Sampling pumps, MSA
Air Sampling pumps, SKC Universal Sample Pumps
Anemometers, Alnor Compuflow
Anemometers, Kurz
Carbon Monoxide Detectors/Meters, Ecoluzer
Combustible/Toxic/Explosive Meters, Banarach
Ear Plugs/Ear Muffs
Flowhoods, Alnor Balometer
Foot Candle Meters, LiteMate III
Heat Stress Monitors, WBGT
Hygrothermographs, Weksler
Impact Noise Analyzers
Infrared Anlyzers, Miran
Manometers and Pitot Tubes
Mercury Vapor Detector, Jerome, Mercury Vapor Analyzer
Noise Dosimeters, Gen Rad 1954
Noise Dosimeters, Metrosonics dB310
Octave Band Noise Analyzers, Gen Rad 1982
Oxygen Deficiency Meters
Passive Chemical Dosimeters
Primary Gas Flow Calibrators, Gilian Gilibrators
Primary Gas Flow Calibrators, Buck/Mini Buck Cali-logger
Protective Clothing
Psychrometers
Respirator Fit Test Systems (Qualitative)
Respirator Fit Test System (Quantitative), TSI Portacount
Respirators, Air Purifying
Respirators, Self-Contained Breathing Apparatus
Sound Level Calibrators, Gen Rad 1562A
Sound Level Calibrators, Metrosonic
Sound Level Meters, Gen Rad 1565B
Staplex High Volume Air Samplers
Staplex High Volume Asbestos Samplers
Universal Test Kits, Draeger
Velometers, Alnor
AN/PDR 27 Meters (RP)
AN/PDR 43 Meters

TABLE I (CONTINUED)

**BASIC BASE BEE JOB
(STG91)**

Narda 8601 RF Survey Meters
Scintillators, AN/PDR 56 Meters
Scintillators, PAC 1S Alpha Detectors
Scintillators, PAC 1S Radiac
Staplex High Volume Samplers
Thermoluminescent Dosimeters
Victoreen 440 Survey Meter
ABC M8 Chemical Detection Paper (RE)
Ground Crew Ensemble
M17 Series Masks
M256 Chemical Detectors
M258A1 Skin Decontamination Kits
M272 Chemical Agent Water Test Kits
M9 Chemical Agent Detection Tape
Portable Generators
Tripods, Air Samplers
Grid Maps (misc)
Portable Transmitters/Receivers
Thermometers
Voltsmeters

TOP DUTIES

61%	G	PERFORMING INDUSTRIAL HYGIENE TASKS
12%	N	PERFORMING BIOENVIRONMENTAL ENGINEERING (BEE) READINESS
6%	D	GENERAL ADMINISTRATION
5%	A	COMMAND AND MANAGEMENT
5%	I	PERFORMING ENVIRONMENTAL PROTECTION TASKS

TABLE I (CONTINUED)

BASIC BASE BEE JOB
(STG91)

<u>TYPICAL TASKS</u>		<u>PMP</u>
G367	Annotate or complete AF Forms 2761 (Hazardous Materials Data)	100
G366	Annotate or complete AF Forms 2758 (Industrial Hygiene Survey Data Sheet-General)	100
G363	Annotate or complete AF Forms 2754 (Chronological Record of Workplace Surveillance)	100
G364	Annotate or complete AF Forms 2756 (Noise Survey (Dosimeter))	100
G493	Research MSDSs	100
G450	Explain MSDSs	100
N1011	Participate in base disaster response exercise	100
N987	Develop recommendations for spill cleanup	100
G374	Annotate or complete DD Forms 2214 (Noise Survey)	100
G398	Conduct industrial hygiene opening conferences	100
G397	Conduct industrial hygiene closing conferences	100
G394	Complete AF Forms 2755 (Master Workplace Exposure Data Summary)	100
G361	Annotate or complete AF Forms 2750 (Industrial Hygiene Sampling Data)	100
G368	Annotate or complete AF Forms 2762 (Listing of Industrial Hygiene Sample Results)	100
G365	Annotate or complete AF Forms 2757 (Illumination Survey Data Sheet)	100
G370	Annotate or complete AF Forms 2764 (Industrial Ventilation Survey Face Velocity Method)	100
G379	Assign risk assessment codes (RAC)	100
N1012	Participate in Broken Arrow exercises	100
G417	Develop recommendations to minimize noise hazards	100
G432	Distribute MSDSs	100
G362	Annotate or complete AF Forms 2751 (Bulk Material Sampling Data)	100
G371	Annotate or complete AF Forms 2765 (Industrial Ventilation Survey Pitot Traverse)	100
G389	Collect ventilation data using face velocity method	100
G457	Identify methods to improve in-door air quality	100
G369	Annotate or complete AF Forms 2763 (Industrial Hygiene Ventilation Presurvey)	100
G380	Calculate ODD/LDD (Observed Daily Dose/Limited Daily Dose)	100
G491	Perform ventilation pre-surveys	100
G390	Collect ventilation data using pitot traverse method	100
G490	Perform theoretical calculations to estimate air exposures	100
G440	Evaluate in-door air quality	100

TABLE I (CONTINUED)

BASIC BASE BEE JOB
(STG91)

<u>TYPICAL TASKS</u>	<u>PMP</u>
G460 Identify potential sources of ACMs	80
G462 Input or update data into computer programs, such as Beekeeper or Phoenix	80
G434 Draft or write workplace narratives describing work flow of industrial shops	80
G351 Analyze equivalent continuous levels (ECL) using noise dosimeters	80
N964 Advise on-scene commander on health impacts of hazard accident or contamination	80
G441 Evaluate industrial hygiene survey reports	80
G471 Package and ship air samples	80
G387 Collect impact noise levels	80

TABLE II
CHIEF BASE BEE JOB
(STG72)

# OF PEOPLE IN GROUP: 79	% ASSIGNED CONUS: 75%
% OF TOTAL SAMPLE: 39%	MAJCOM: 18% MAC, 15% SAC, 15% TAC 13% USAF, 13% ATC

AVERAGE TAFMS: 100 months	AVERAGE # OF TASKS: 343
AVERAGE TIUF: 79 months	AVERAGE # PERSONS SUPERVISE: 5
AVERAGE PAYGRADE: O-3	

FUNCTIONAL AREA: Industrial Hygiene Programs

TYPE OF IH SURVEYS PERFORMED/REVIEW: Administrative Area
Annual Industrial Area
Baseline Industrial Area
Periodic Industrial Area
Special

COMPUTER PROGRAMS USED: ASIMS BEEKEEPER
HMIS IEX
LOCALLY DEVELOPED PROGRAMS

SUPPORT EQUIPMENT USED: Autoclaves (EP)
Bacteriological Water Test Kits, Millipore
Bunsen Burners
Coliwasa
Composite/Discrete Samplers, ISCO
DPD Kits (chlorine/Ph Analysis), Hach
DPD Kits (chlorine/Ph Analysis), La Mott
Incubators (Dry Air/Wet Bath), Millipore
Membrane Filters
PCB Screening Kits, Chlor-N-Oil
pH/Chlorine Test Strips
pH Meters, Hach
Refrigerators
Rubber Aprons/Gloves
Air Sampling Collection Devices, Bubblers/Impingers (IH)
Air Sampling Collection Devices, Filters (37mm, 0.8um)
Air Sampling Collection Devices, Respirable Dust Samplers
Air Sampling Collection Devices, Tube/charcol, silica gel

TABLE II (CONTINUED)

CHIEF BASE BEE JOB
(STG 72)

Air Sampling pumps, Ametek/Dupont Alpha 1
Air Sampling pumps, Ametek/Dupont Alpha 2
Air Sampling pumps, Gilian
Anemometers, Alnor Compuflow
Anemometers, Kurz
Carbon Monoxide Detectors/Meters, Ecoluzer
Ear Plugs/Ear Muffs
Foot Candle Meters, LiteMate III
Heat Stress Monitors, WBGT
Hygrothermographs, Weksler
Manometers and Pitot Tubes
Mercury Vapor Detector, Jerome, Mercury Vapor Analyzer
Noise Dosimeters, Gen Rad 1954
Noise Dosimeters, Metrosonics dB310
Octave Band Noise Analyzers, Gen Rad 1982
Oxygen Deficiency Meters
Passive Chemical Dosimeters
Primary Gas Flow Calibrators, Buck/Mini Buck Cali-logger
Protective Clothing
Psychrometers
Respirator Fit Test Systems (Qualitative)
Respirators, Air Purifying
Respirators, Self-Contained Breathing Apparatus
Sound Level Calibrators, Gen Rad 1562A
Sound Level Calibrators, Metrosonic
Sound Level Meters, Gen Rad 1565B
Staplex High Volume Air Samplers
Staplex High Volume Asbestos Samplers
Universal Test Kits, Draeger
Universal Test Kits, MSA
Velometers, Alnor
AN/PDR 27T Meters (RP)
AN/PDR 43 Meters
Eberline RO2
Holiday Microwave Oven Meters
Narda 8601 RF Survey Meters
Scintillators, AN/PDR 56F Meters
Scintillators, PAC 1S Alpha Detectors

TABLE II (CONTINUED)

CHIEF BASE BEE JOB (STG 72)

Scintillators, PAC 1S Radiac
 Staplex High Volume Samplers
 Thermoluminescent Dosimeters
 Victoreen 440 Survey Meter
 ABC M8 Chemical Detection Paper (RE)
 Ground Crew Ensemble
 M17 Series Masks
 M256 Chemical Detectors
 M258A1 Skin Decontamination Kits
 M272 Chemical Agent Water Test Kits
 M9 Chemical Agent Detection Tape
 Portable Generators
 Tripods, Air Samplers
 Cameras (misc)
 Grid Maps
 Portable Transmitters/Receivers
 Thermometers

TOP DUTIES

36%	G	PERFORMING INDUSTRIAL HYGIENE TASKS
12%	H	PERFORMING RADIOLOGICAL HEALTH TASKS
11%	I	PERFORMING ENVIRONMENTAL PROTECTION TASKS
10%	A	COMMAND AND MANAGEMENT
9%	N	PERFORMING BIOENVIRONMENTAL ENGINEERING READINESS
7%	D	GENERAL ADMINISTRATION
5%	B	PERSONNEL

TYPICAL TASKS

PMP

G376	Approve or disapprove industrial hygiene inspection reports	97
G355	Analyze ventilation data	97
G514	Review workplace narratives and workarea diagrams	97
G423	Direct BES involvement in hazardous communication (HazCom) programs	96
G377	Approve or disapprove use of issue exception (IEX) code nine chemicals	96
A74	Participate in aerospace medicine council meetings	96
G448	Evaluate requests for issue of hazardous materials	96
A78	Participate in environmental protection committee meetings	96

TABLE II (CONTINUED)

CHIEF BASE BEE JOB
(STG72)

<u>TYPICAL TASKS</u>	<u>PMP</u>
A47 Draft or write OIs	96
G351 Analyze equivalent continuous levels (ECL) using noise dosimeters	95
G498 Review AF Forms 2754	95
G363 Annotate or complete AF Forms 2754 (Chronological Record of Workplace Surveillance)	95
G435 Evaluate AF Forms 190 (Occupational Illness/Injury Report)	94
G430 Direct ventilation surveys	92
G420 Direct air sampling surveys	92
G505 Review AF Forms 2763	92
N1011 Participate in base disaster response exercise	92
G450 Explain MSDSs	92
G379 Assign risk assessment codes (RAC)	92
A71 Investigate problems, such as incidents or complaints	91
G449 Evaluate shop implementation of HazCom programs	91
G510 Review DD Forms 2214	91
G501 Review AF Forms 2757	91
H522 Annotate or complete AF Forms 2759 (Radio Frequency Emitter Survey)	91
A75 Participate in Air Force occupational safety and health council meetings	91
D260 Review AF Forms 332 (Base Civil Engineer Work Request)	91
G459 Identify personnel for placement on Hearing Conservation Program	90
G378 Assign IEX codes	89
G453 Identify controls to minimize exposure to airborne contaminants	89
G411 Develop air sampling strategies	89
G512 Review IEX code M-15 computer listings, semi-annual listings, stock number user directories, or cargo code listings	89
N979 Conduct BEE response team training	89
I621 Compare drinking water laboratory results to local, state, and national standards	89
H556 Identify controls for RF hazards	89
N961 Advise on-scene commander extent of contamination levels	89
D258 Read technical publications, such as regulations, standards, or reports	87
G428 Direct noise surveys	87
H541 Conduct ALARA reviews	86
H549 Direct RF hazard evaluations	86
H550 Direct TLD program	85

TABLE III

**CHIEF NON-RADIATION BASE BEE JOB
(STG58)**

OF PEOPLE IN GROUP: 5
% OF TOTAL SAMPLE: 2.5%

% ASSIGNED CONUS: 80%
MAJCOM: 40% AFLC, 20% PACAF, 20% SAC,
20% TAC

AVERAGE TAFMS: 33 months
AVERAGE TIUF: 32 months
AVERAGE PAYGRADE: O-2

AVERAGE # OF TASKS: 131
AVERAGE # PERSONS SUPERVISE: 2

FUNCTIONAL AREA: Industrial Hygiene Programs

TYPE OF IH SURVEYS PERFORMED/REVIEW: Administrative Area
Annual Industrial Area
Baseline Industrial Area
Periodic Industrial Area
Special

COMPUTER PROGRAMS USED: ASIMS BEEKEEPER
HMIS PHOENIX

SUPPORT EQUIPMENT USED: Autoclaves (EP)
Bacteriological Water Test Kits, Millipore
Black Lights, Hach
Coliwasa
Hot Plate/Stirrers
Membrane Filters
pH/Chlorine Test Strips
Refrigerators
Rubber Aprons/Gloves
Air Sampling Collection Devices, Bubblers/Impingers (IH)
Air Sampling Collection Devices, Filters (37mm, 0.8um)
Air Sampling Collection Devices, Tube/charcol, silica gel
Air Sampling pumps, Ametek/Dupont Alpha 1
Air Sampling pumps, Ametek/Dupont Alpha 2
Air Sampling pumps, SKC Universal Sample Pumps
Anemometers, Alnor Compuflow
Carbon Monoxide Detectors/Meters, Ecoluzer
Combustible/Toxic/Explosive Meters, Gastech
Ear Plugs/Ear Muffs
Flowhoods, Alnor Balometer

TABLE III (CONTINUED)

**CHIEF NON-RADIATION BASE BEE JOB
(STG58)**

Foot Candle Meters, LiteMate III
Heat Stress Monitors, WBGT
Hygrothermographs, Weksler
Manometers and Pitot Tubes
Mercury Vapor Detector, Jerome, Mercury Vapor Analyzer
Noise Dosimeters, Gen Rad 1954
Noise Dosimeters, Metrosonics dB310
Octave Band Noise Analyzers, Gen Rad 1982
Oxygen Deficiency Meters
Passive Chemical Dosimeters
Primary Gas Flow Calibrators, Buck/Mini Buck Cali-logger
Protective Clothing
Psychrometers
Respirator Fit Test System (Quantitative), TSI Portacount
Respirators, Air Purifying
Respirators, Self-Contained Breathing Apparatus
Sound Level Calibrators, Gen Rad 1562A
Sound Level Meters, Gen Rad 1565B
Staplex High Volume Air Samplers
Universal Test Kits, Draeger
Velometers, Alnor
AN/PDR 27 Meters (RP)
AN/PDR 27T Meters
Microwave Oven Meters
Narda 8601 RF Survey Meters
Staplex High Volume Samplers
Thermoluminescent Dosimeters
Victoreen 471
ABC M8 Chemical Detection Paper (RE)
M256 Chemical Detectors
M272 Chemical Agent Water Test Kits
Portable Generators
Tripods, Air Samplers
Cameras (misc)
Grid Maps
Portable Transmitters/Receivers
Thermometers
Voltmeters

TABLE III (CONTINUED)

CHIEF NON-RADIATION BASE BEE JOB (STG58)

TOP DUTIES

53% G PERFORMING INDUSTRIAL HYGIENE TASKS
 12% A COMMAND AND MANAGEMENT
 10% I PERFORMING ENVIRONMENTAL PROTECTION TASKS
 9% D GENERAL ADMINISTRATION
 5% B PERSONNEL

TYPICAL TASKS

PMP

G441	Evaluate industrial hygiene survey reports	100
G505	Review AF Forms 2763	100
G498	Review AF Forms 2754	100
G502	Review AF Forms 2758	100
G504	Review AF Forms 2762	100
G499	Review AF Forms 2755	100
G510	Review DD Forms 2214	100
G503	Review AF Forms 2761	100
G351	Analyze equivalent continuous levels (ECL) using noise dosimeters	100
D260	Review AF Forms 332 (Base Civil Engineer Work Request)	100
B97	Approve or disapprove leaves or passes	100
A71	Investigate problems, such as incidents or complaints	80
D235	Evaluate blueprints or plans for bioenvironmental engineering controls	80
G474	Perform data retrieval from computer programs, such as Beekeeper or Phoenix systems	80
G506	Review AF Forms 2764	80
G507	Review AF Forms 2765	80
G500	Review AF Forms 2756	80
G496	Review AF Forms 2750	80
G497	Review AF Forms 2751	80
A31	Coordinate work order requests with civil engineering personnel	80
G423	Direct BES involvement in hazardous communication (HazCom) programs	80
G367	Annotate or complete AF Forms 2761 (Hazardous Materials Data)	80
G366	Annotate or complete AF Forms 2758 (Industrial Hygiene Survey Data Sheet-General)	80
G398	Conduct industrial hygiene opening conferences	80
G394	Complete AF Forms 2755 (Master Workplace Exposure Data Summary)	80

TABLE III (CONTINUED)

CHIEF NON-RADIATION BASE BEE JOB
(STG58)

<u>TYPICAL TASKS</u>	<u>PMP</u>
G382 Classify industrial shops as hazardous noise areas	80
G374 Annotate or complete DD Forms 2214 (Noise Survey)	80
G370 Annotate or complete AF Forms 2764 (Industrial Ventilation Survey Face Velocity Method)	80
G453 Identify controls to minimize exposure to airborne contaminants	80
G449 Evaluate shop implementation of HazCom programs	80
G458 Identify operational need for personal protection equipment (PPE) other than respiratory protection equipment	80
H589 Review AF Forms 2759	80
A62 Evaluate OIs	80
A8 Approve or disapprove operating instructions (OIs)	80
G402 Conduct pre-survey reviews of industrial hygiene case files	60
G387 Collect impact noise levels	60
A45 Draft or write directives, such as manuals, regulations, or supplements	60

TABLE IV
BASE BEE MANAGEMENT JOB
(STG70)

# OF PEOPLE IN GROUP: 6	% ASSIGNED CONUS: 100%
% OF TOTAL SAMPLE: 3%	MAJCOM: 83% AFLC, 17% TAC

AVERAGE TAFMS: 204 months	AVERAGE # OF TASKS: 219
AVERAGE TIUF: 170 months	AVERAGE # PERSONS SUPERVISE: 9
AVERAGE PAYGRADE: O-4/5	

FUNCTIONAL AREA: Administration Functions
Environmental Protection Programs

TYPE OF IH SURVEYS PERFORMED/REVIEW: Administrative Area
Annual Industrial Area
Baseline Industrial Area
Periodic Industrial Area
Special

COMPUTER PROGRAMS USED: ASIMS BEEKEEPER
HMIS PHOENIX
IEX LOCALLY DEVELOPED PROGRAMS

SUPPORT EQUIPMENT USED: Autoclaves (EP)
Bacteriological Water Test Kits, Millipore
Black Lights, Hach
Coliwatch
DPD Kits (chlorine/Ph Analysis), La Mott
Incubators (Dry Air/Wet Bath), Millipore
Membrane Filters
Refrigerators
Rubber Aprons/Gloves
Air Sampling Collection Devices, Bubblers/Impingers (IH)
Air Sampling Collection Devices, Filters (37mm, 0.8um)
Air Sampling Collection Devices, Respirable Dust Samplers
Air Sampling Collection Devices, Tube/charcol, silica gel
Air Sampling pumps, Ametek/Dupont P-200
Air Sampling pumps, Ametek/Dupont P-4000
Air Sampling pumps, MSA
Anemometers, Alnor Compuflow
Combustible/Toxic/Explosive Meters, Gastech
Ear Plugs/Ear Muffs

TABLE IV (CONTINUED)

BASE BEE MANAGEMENT JOB
(STG70)

Flame Ionization Detectors, Foxboro Century OVA
Flowhoods, Alnor Balometer
Heat Stress Monitors, WBGT
Hygrothermographs, Weksler
Impact Noise Analyzers
Infrared Analyzers, Miran
Manometers and Pitot Tubes
Mercury Vapor Detector, Jerome, Mercury Vapor Analyzer
Mercury Vacuums
Noise Dosimeters, Metrosonics dB310
Octave Band Noise Analyzers, Gen Rad 1982
Oxygen Deficiency Meters
Passive Chemical Dosimeters
Primary Gas Flow Calibrators, Gilian Gilibrators
Protective Clothing
Psychrometers
Respirator Fit Test System (Quantitative), TSI Portacount
Respirators, Air Purifying
Respirators, Self-Contained Breathing Apparatus
Sound Level Calibrators, Gen Rad 1562A
Sound Level Calibrators, Metrosonic
Sound Level Meters, Gen Rad 1565B
Staplex High Volume Air Samplers
Universal Test Kits, Draeger
Universal Test Kits, MSA
Vacuum Pressure Pumps
Velometers, Alnor
Narda 8601 RF Survey Meters (RP)
Staplex High Volume Samplers
ABC M8 Chemical Detection Paper (RE)
Ground Crew Ensemble
M17 Series Masks
M256 Chemical Detectors
M272 Chemical Agent Water Test Kits
M9 Chemical Agent Detection Tape
Portable Generators
Tripods, Air Samplers
Cameras (misc)

TABLE IV (CONTINUED)

BASE BEE MANAGEMENT JOB
(STG70)

Grid Maps
Portable Transmitters/Receivers
Thermometers
Voltmeters

TOP DUTIES

21%	A	COMMAND AND MANAGEMENT
18%	G	PERFORMING INDUSTRIAL HYGIENE TASKS
14%	B	PERSONNEL
12%	D	GENERAL ADMINISTRATION
9%	C	RESOURCE MANAGEMENT
8%	N	PERFORMING BIOENVIRONMENTAL ENGINEERING (BEE) READINESS
6%	I	PERFORMING ENVIRONMENTAL PROTECTION TASKS
5%	E	INSPECTION AND EVALUATION

TYPICAL TASKS

PMP

G441	Evaluate industrial hygiene survey reports	100
D258	Read technical publications, such as regulations, standards, or reports	100
B139	Review EPRs	100
B124	Draft or write recommendations for decorations or awards	100
D256	Proofread correspondence, forms, or reports	100
D225	Draft or write correspondence, such as letters or messages for electrical transmissions	100
A48	Draft or write point, position, or talking papers	100
D257	Read current periodicals and journals relating to field of work	100
A62	Evaluate OIs	100
A61	Evaluate MAJCOM publications	100
B142	Review personnel records	100
B97	Approve or disapprove leaves or passes	100
A28	Coordinate changes to publications with higher headquarters personnel	100
A2	Advise commanders or staff agency personnel on matters, such as capabilities, procedures, or programs	100
A1	Advise Air Force Reserves (AFRES) or Air National Guard (ANG) agencies or personnel	100
G423	Direct BES involvement in hazardous communication (HazCom) programs	83

TABLE IV (CONTINUED)

BASE BEE MANAGEMENT JOB
(STG70)

<u>TYPICAL TASKS</u>		<u>PMP</u>
N961	Advise on-scene commander extent of contamination levels	83
N962	Advise on-scene commander of PPE requirements or evacuation and shelters zones	83
A68	Implement unit policies or procedures	83
B131	Evaluate production or output of workcenters	83
N964	Advise on-scene commander on health impacts of hazard accident or contamination	83
C160	Conduct or participate in planning meetings	83
B127	Endorse EPRs	83
A38	Develop unit goals or objectives	83
B118	Draft or write enlisted performance reports (EPRs)	83
H549	Direct RF hazard evaluations	83
B105	Certify civilian timecards	83
B110	Coordinate with union personnel on civilian personnel matters	83
A59	Evaluate host-tenant support agreements	83
B112	Counsel personnel on personal- or military-related matters	83
A41	Direct bioenvironmental engineering evaluations of chemical incidences or disasters	83
B98	Approve or disapprove letters of appreciation or reprimand	83
C173	Develop performance standards or elements	83
E269	Analyze self-inspection reports	83
B141	Review OPRs	67

TABLE V

INDUSTRIAL HYGIENE CONSULTANT JOB
(STG 53)

# OF PEOPLE IN GROUP: 6	% ASSIGNED CONUS: 100%
% OF TOTAL SAMPLE: 3%	MAJCOM: 100% AFSC

AVERAGE TAFMS: 92 months	AVERAGE # OF TASKS: 113
AVERAGE TIUF: 65 months	AVERAGE # PERSONS SUPERVISE: 1
AVERAGE PAYGRADE: O-3	

FUNCTIONAL AREA: Industrial Hygiene Programs

TYPE OF IH SURVEYS PERFORMED/REVIEW: Administrative Area
 Baseline Industrial Area
 Special

COMPUTER PROGRAMS USED: HMIS
 LOCALLY DEVELOPED PROGRAMS

SUPPORT EQUIPMENT USED: Air Sampling Collection Devices, Bubblers/Impingers (IH)
 Air Sampling Collection Devices, Filters (37mm, 0.8um)
 Air Sampling Collection Devices, Respirable Dust Samplers
 Air Sampling Collection Devices, Tube/charcol, silica gel
 Air Sampling pumps, Ametek/Dupont Alpha 1
 Air Sampling pumps, Ametek/Dupont Alpha 2
 Analytical Balances
 Anemometers, Alnor Compuflow
 Anemometers, Kurz
 Combustible/Toxic/Explosive Meters, Industrial Scientific
 Ear Plugs/Ear Muffs
 Flame Ionization Detectors, Foxboro Centruy OVA
 Flowhoods, Alnor Balometer
 Heat Stress Monitors, Botsball
 Heat Stress Monitors, WBGT
 Hygrothermographs, Weksler
 Impact Noise Analyzers
 Infrared Analyzers, Miran
 Manometers and Pitot Tubes
 Noise Dosimeters, Metrosonics dB310
 Octave Band Noise Analyzers, Gen Rad 1988
 Passive Chemical Dosimeters

TABLE V (CONTINUED)

INDUSTRIAL HYGIENE CONSULTANT JOB (STG 53)

Photoionization Detectors, HNU
 Photoionization Detectors, Photovac Microtip
 Primary Gas Flow Calibrators, Gilian Gilibrators
 Primary Gas Flow Calibrators, Buck/Mini Buck Cali-logger
 Protective Clothing
 Psychrometers
 Random Noise Generators
 Respirator Fit Test System (Quantitative), TSI Portacount
 Staplex High Volume Asbestos Samplers
 Velometers, Alnor
 Cameras (misc)
 Thermometers

TOP DUTIES

32% G PERFORMING INDUSTRIAL HYGIENE TASKS
 25% D GENERAL ADMINISTRATION
 14% J CONSULTING TASKS
 11% A COMMAND AND MANAGEMENT
 8% M PERFORMING PROJECT MANAGEMENT TASKS

TYPICAL TASKS

PMP

J736	Log telephone consultations into computer data base system	100
D263	Schedule and make arrangements for temporary duty (TDY)	100
D258	Read technical publications, such as regulations, standards, or reports	100
J750	Select survey team members for consultation visits	100
D230	Draft or write technical reports	100
D257	Read current periodicals and journals relating to field of work	100
D229	Draft or write scientific or professional papers	100
D254	Present informal briefings	100
A1	Advise Air Force Reserves (AFRES) or Air National Guard (ANG) agencies or personnel	100
G383	Collect air samples	100
D227	Draft or write memoranda for record (MFR)	100
D267	Type correspondence, reports, or forms	83
J729	Develop procedures for performing new industrial hygiene surveys	83
G350	Analyze air sample data	83

TABLE V (CONTINUED)

INDUSTRIAL HYGIENE CONSULTANT JOB
(STG 53)

<u>TYPICAL TASKS</u>	<u>PMP</u>
G384 Collect bulk samples	83
D226 Draft or write inputs for technical publications, such as magazines, reports, or bulletins	83
G381 Calibrate air sampling pumps	83
G361 Annotate or complete AF Forms 2750 (Industrial Hygiene Sampling Data)	83
G362 Annotate or complete AF Forms 2751 (Bulk Material Sampling Data)	83
G420 Direct air sampling surveys	67
J737 Package and ship equipment and supplies	67
G410 Determine threshold limit values (TLV)	67
D235 Evaluate blueprints or plans for bioenvironmental engineering controls	67
G490 Perform theoretical calculations to estimate air exposures	67
G355 Analyze ventilation data	67
M915 Maintain or update program folders project files	67
A65 Evaluate technical publications, such as regulations, standards, or reports	67
D248 Plan meetings, conferences, or working groups, such as agendas, invitations, or follow up actions	67
D262 Review inputs for technical publications, such as regulations, standards, or reports	67
M887 Coordinate requirements with agencies or contractors for systems, facilities, or equipment	67

TABLE VI
ENVIRONMENTAL PROTECTION CONSULTANT JOB
(STG57)

# OF PEOPLE IN GROUP: 5	% ASSIGNED CONUS: 60%
% OF TOTAL SAMPLE: 2.5%	% AJCOM: 100% AFSC
AVERAGE TAFMS: 106 months	AVERAGE # OF TASKS: 186
AVERAGE TIUF: 72 months	AVERAGE # PERSONS SUPERVISE: 1
AVERAGE PAYGRADE: O-3	

FUNCTIONAL AREA: Environmental Protection Programs

COMPUTER PROGRAMS USED: HMIS
LOCALLY DEVELOPED PROGRAMS

SUPPORT EQUIPMENT USED: Analytical Balance, Fisher Scientific (EP)
Autoclaves
Bacteriological Water Test Kits, Millipore
Bottom Samplers
Coliwasa
Composite/Discrete Samplers, American Sigma
Composite/Discrete Samplers, ISCO
Conductivity Meters, Hach
Conductivity Meters, YSI
Dissolved Oxygen Meters, Hach
Dissolved Oxygen Meters, YSI
DPD Kits (chlorine/pH Analysis), Hach
DPD Kits (chlorine/pH Analysis), La Mott
Flow Meters, ISCO
Hot Plate/Stirrers
Incubators (BOD Analysis), Fisher
Ion Meters, Hach
Membrane Filters
Microscopes
pH/Chlorine Test Strips
pH Meters, Hach
pH Meters, Orion
Pipette Fillers, Fisher
Refrigerators
Rubber Aprons/Gloves
Water Analysis Kits, DREL 2500

TABLE VI (CONTINUED)

ENVIRONMENTAL PROTECTION CONSULTANT JOB
(STG57)

Water Analysis Kits, Hach
 Water Turbidity and Color Test Kits, La Mott
 Combustible/Toxic/Explosive Meters, Gastech (IH)
 Ear Plugs/Ear Muffs
 Oxygen Deficiency Meters
 Fidler (RP)
 Cameras (misc)
 Grid Maps
 Thermometers
 Voltmeters

TOP DUTIES

34% I PERFORMING ENVIRONMENTAL PROTECTION TASKS
 14% D GENERAL ADMINISTRATION
 14% M PERFORMING PROJECT MANAGEMENT TASKS
 10% A COMMAND AND MANAGEMENT
 10% J CONSULTING TASKS

TYPICAL TASKSPMP

I667	Interpret civil engineering, water, or topographical maps	100
J753	Write consultative letters on support survey results	100
I647	Direct waste water sampling	100
J727	Construct and maintain consultant project folder	100
I639	Direct nonpotable water sampling	100
I700	Perform waste stream characterizations	100
I670	Interpret storm water discharge sample results	100
D263	Schedule and make arrangements for temporary duty (TDY) trips	100
I604	Annotate or complete AF Forms 2752A/B (Environmental Sampling Data)	100
M890	Define scope or technical boundaries of project	100
I702	Perform water temperature measurements	100
A71	Investigate problems, such as incidents or complaints	100
I609	Calculate flow rate of water	100
D227	Draft or write memoranda for record (MFR)	100
I665	Inspect sewage facilities	80
I666	Inspect sewage lagoons	80
I622	Compare soil laboratory results to local, state, and national standards	80

TABLE VI (CONTINUED)

ENVIRONMENTAL PROTECTION CONSULTANT JOB
(STG57)

<u>TYPICAL TASKS</u>	<u>PMP</u>
I708 Review AF Forms 2752A/B	80
I680 Package and ship water samples	80
J742 Perform single water contamination surveys	80
M882 Conduct project kick-off meetings	80
I661 Identify sources of water contamination	80
I642 Direct soil sampling	80
M873 Approve or disapprove contractor's final report packages	80
I707 Preserve and transport water samples	80
I679 Package and ship soil samples	80
I660 Identify soil sampling sites	80
M953 Review SOWs	80
M888 Coordinate with customers on receipt or nonreceipt of contract deliverables	80
I643 Direct special biological analyses of drinking water	80
I603 Advise base agencies of methods to remove sources of potable water contamination	80
I633 Develop storm water monitoring plans	80
I634 Develop waste analyses plans	80
J745 Perform water treatment plant surveys	80
I616 Collect soil samples	80
I630 Develop nonpotable water sampling plans	80
I625 Conduct water sampling collection and transport training	80
J732 Evaluate base potable water sampling procedures	80
J750 Select survey team members for consultation visits	80
A69 Interpret data trend analyses	80
I617 Collect special biological samples of drinking water	80
J737 Package and ship equipment and supplies	80
A2 Advise commanders or staff agency personnel on matters, such as capabilities, procedures, or programs	80
D232 Draft or write unit activity reports	80

TABLE VII
ENVIRONMENTAL PROTECTION MANAGEMENT JOB
(STG 74)

# OF PEOPLE IN GROUP: 8	% ASSIGNED CONUS: 100%
% OF TOTAL SAMPLE: 4%	MAJCOM: 38% AFSC, 38% AFLC, 13% AFSPACECOM, 13% HQ USAF
AVERAGE TAFMS: 204 months	AVERAGE # OF TASKS: 225
AVERAGE TIUF: 148 months	AVERAGE # PERSONS SUPERVISE: 10
AVERAGE PAYGRADE: O-4/5	

FUNCTIONAL AREA: Environmental Protection Programs
Program or Contract Management Activities

SUPPORT EQUIPMENT USED: N/A

TOP DUTIES

27%	A	COMMAND AND MANAGEMENT
15%	C	RESOURCE MANAGEMENT
13%	D	GENERAL ADMINISTRATION
12%	M	PERFORMING PROJECT MANAGEMENT TASKS
11%	B	PERSONNEL
6%	I	PERFORMING ENVIRONMENTAL PROTECTION TASKS

TYPICAL TASKS

PMP

A10	Approve or disapprove point, position, or talking papers	100
A38	Develop unit goals or objectives	100
A48	Draft or write point, position, or talking papers	100
A36	Develop organizational charts, graphs, or status boards	100
D258	Read technical publications, such as regulations, standards, or reports	100
E291	Review results of previous IG inspections, SAVs, or audits	100
D233	Escort dignitaries, DVs, or visitors	100
A9	Approve or disapprove organizational charts, graphs, or status boards	100
A2	Advise commanders or staff agency personnel on matters, such as capabilities, procedures, or programs	88
A67	Implement Air Force Total Quality Management (TQM) Program	88
B117	Draft or write civilian performance reports	88
C160	Conduct or participate in planning meetings	88
C178	Draft or write PDs	88

TABLE VII (CONTINUED)

ENVIRONMENTAL PROTECTION MANAGEMENT JOB
(STG 74)

<u>TYPICAL TASKS</u>		<u>PMP</u>
A78	Participate in environmental protection committee meetings	88
B116	Draft or write civilian job descriptions	88
A51	Draft or write responses to congressional inquiries	88
A35	Develop formats for correspondence, reports, or forms	88
D212	Annotate or complete DD Forms 1610 (Request and Authorization for TDY Travel of DOD Personnel)	88
C164	Coordinate manning or manpower requirements with higher headquarters personnel	88
D256	Proofread correspondence, forms, or reports	88
M953	Review SOWs	88
C169	Determine requirements for space, personnel equipment, or supplies	88
M877	Approve or disapprove statement of work (SOWs)	88
A16	Approve or disapprove responses to congressional inquiries	88
D263	Schedule and make arrangements for temporary duty (TDY) trips	88
B123	Draft or write officer performance reports (OPRs)	88
J722	Advise base Bioenvironmental Engineers (BEEs) on environmental protection matters	88
A60	Evaluate inputs to MOUs or MOAs	88
D267	Type correspondence, reports, or forms	88
D231	Draft or write trip reports	88
A19	Approve or disapprove unit administrative procedures, such as office file plans or forms management programs	88
B129	Evaluate individuals for promotions, demotions, or reclassifications	88
M889	Coordinate with legal personnel or contracting officers on technical aspects of contracts, bids, or proposals	88
B143	Review recommendations for awards or decorations	88
B142	Review personnel records	88
A29	Coordinate policies or projects with higher headquarters personnel	75
A11	Approve or disapprove policy letters	75
C150	Approve or disapprove financial plans for programs	75
C156	Approve or disapprove position descriptions (PDs)	75
C168	Determine priority of program or project requirements	75
A90	Review responses to congressional inquiries	75
B138	Review civilian job descriptions	75
C187	Evaluate PDs	75
D227	Draft or write memoranda for record (MFR)	75

TABLE VII (CONTINUED)

ENVIRONMENTAL PROTECTION MANAGEMENT JOB
(STG 74)

<u>TYPICAL TASKS</u>	<u>PMP</u>
C157 Approve or disapprove requests for personnel actions	75
C171 Develop budgets or budget estimates	75
A46 Draft or write input to congressional testimonies	75
E290 Review responses to inspection reports	75
A18 Approve or disapprove temporary duty (TDY) requests	75

TABLE VIII

PROJECT-CONTRACT MANAGEMENT JOB (STG 62)

OF PEOPLE IN GROUP: 8 % ASSIGNED CONUS: 100%
% OF TOTAL SAMPLE: 4% MAJCOM: 63% AFCEE, 25% AFSC, 13% AFLC

AVERAGE TAFMS: 76 months AVERAGE # OF TASKS: 110
AVERAGE TIUF: 69 months AVERAGE # PERSONS SUPERVISE: 3
AVERAGE PAYGRADE: O-3

FUNCTIONAL AREA: Environmental Protection Programs
Program or Contract Management Activities

COMPUTER PROGRAMS USED: LOCALLY DEVELOPED PROGRAMS

SUPPORT EQUIPMENT USED: N/A

TOP DUTIES

45% M PERFORMING PROJECT MANAGEMENT TASKS
14% D GENERAL ADMINISTRATION
13% A COMMAND AND MANAGEMENT
13% I PERFORMING ENVIRONMENTAL PROTECTION TASKS

TYPICAL TASKS

PMP

M873	Approve or disapprove contractor's final report packages	100
D258	Read technical publications, such as regulations, standards, or reports	100
M890	Define scope or technical boundaries of project	88
A88	Review installation restoration program (IRP) projects	88
M915	Maintain or update program folders project files	88
M886	Coordinate projects with regulatory agencies	88
M882	Conduct project kick-off meetings	88
M952	Review results of contractor proposal evaluations	88
D256	Proofread correspondence, forms, or reports	88
M883	Coordinate final contractor reports with interested parties	88
D227	Draft or write memoranda for record (MFR)	88
M917	Participate in program review meetings	88
A48	Draft or write point, position, or talking papers	88
D248	Plan meetings, conferences, or working groups, such as agendas, invitations, or follow-up actions	88

TABLE VIII
PROJECT-CONTRACT MANAGEMENT JOB
(STG 62)

<u>TYPICAL TASKS</u>		<u>PMP</u>
M884	Coordinate packaging and transporting of deliverables with interested parties	88
D263	Schedule and make arrangements for temporary duty (TDY) trips	88
I716	Review results of laboratory tests	75
M906	Evaluate contractor's compliance with contract terms	75
M885	Coordinate project details with principle contracting officer (PCO)	75
M887	Coordinate requirements with agencies or contractors for systems, facilities, or equipment	75
M946	Review contractor's final report packages	75
M876	Approve or disapprove schedule of changes (SOCs)	75
M875	Approve or disapprove purchase request packages	75
M926	Prepare cost estimates for projects or programs	75
M903	Estimate impact on programs or projects due to delays	75
M943	Review and formalize comments on contractor deliverables	63
M895	Develop SOCs	63
M949	Review man-hour accounting systems reports	63
M902	Establish baseline requirements for projects	63
M951	Review purchase request packages	63
I713	Review IRP site risk assessment report	63
M934	Prepare program schedules	63
I667	Interpret civil engineering, water, or topographical maps	63
A70	Interpret regulations, manuals, supplements, or procedures	63
I622	Compare soil laboratory results to local, state, and national standards	63

TABLE IX
BASIC RESEARCH JOB
(STG43)

# OF PEOPLE IN GROUP: 5	% ASSIGNED CONUS: 100%
% OF TOTAL SAMPLE: 2.5%	MAJCOM: 60% AFSC, 40% AU
AVERAGE TAFMS: 61 months	AVERAGE # OF TASKS: 41
AVERAGE TIUF: 51 months	AVERAGE # PERSONS SUPERVISE: 0
AVERAGE PAYGRADE: O-2	

FUNCTIONAL AREA: Research and Development Programs

SUPPORT EQUIPMENT USED: Analytical Balance, Fisher Scientific
 Hot Plate/Stirrers
 Refrigerators

TOP DUTIES

50%	K	PERFORMING RESEARCH AND DEVELOPMENT TASKS
33%	D	GENERAL ADMINISTRATION
8%	F	TRAINING
5%	A	COMMAND AND MANAGEMENT

TYPICAL TASKS

		<u>PMP</u>
D257	Read current periodicals and journals relating to field of work	100
D229	Draft or write scientific or professional papers	100
D258	Read technical publications, such as regulations, standards, or reports	80
K806	Perform statistical analyses on research data	80
F296	Attend college courses during duty hours	60
D226	Draft or write inputs for technical publications, such as magazines, reports, or bulletins	60
K766	Compare research data with model or criteria	60
D267	Type correspondence, reports, or forms	60
A82	Perform data trend analyses	60
A69	Interpret data trend analyses	60
D251	Prepare informal briefings	60
D230	Draft or write technical reports	60
K772	Coordinate use of research facilities with researchers	60
K773	Define research problems	60
K811	Prepare reports documenting research and development findings or conclusions	60

TABLE IX
BASIC RESEARCH JOB
(STG43)

<u>TYPICAL TASKS</u>	<u>PMP</u>
D254 Present informal briefings	60
K819 Set up experimental designs	60
D246 Participate in professional meetings or conferences	60
D255 Present scientific or professional papers at conventions or conferences	40
K764 Calibrate research equipment	40
K761 Arrange for research data processing	40
D224 Draft or write articles for professional journals	40
D213 Conduct tours of facilities or equipment	40

TABLE X

RESEARCH AND DEVELOPMENT PROJECT MANAGEMENT JOB
(STG82)

# OF PEOPLE IN GROUP: 5	% ASSIGNED CONUS: 100%
% OF TOTAL SAMPLE: 2.5%	MAJCOM: 100% AFCESA
AVERAGE TAFMS: 135 months	AVERAGE # OF TASKS: 154
AVERAGE TIUF: 130 months	AVERAGE # PERSONS SUPERVISE: 1
AVERAGE PAYGRADE: O-3/4	

FUNCTIONAL AREA: Research and Development Programs

COMPUTER PROGRAMS USED: LOCALLY DEVELOPED PROGRAMS

SUPPORT EQUIPMENT USED: Cameras (misc)

TOP DUTIES

30%	M	PERFORMING PROJECT MANAGEMENT TASKS
27%	K	PERFORMING RESEARCH AND DEVELOPMENT TASKS
22%	D	GENERAL ADMINISTRATION
8%	C	RESOURCE MANAGEMENT
7%	A	COMMAND AND MANAGEMENT

TYPICAL TASKS

PMP

D256	Proofread correspondence, forms, or reports	100
M946	Review contractor's final report packages	100
K818	Review research proposals or protocols	100
K789	Identify research requirements	100
K762	Brief research review boards on objectives of proposed research or progress of research	100
K773	Define research problems	100
A85	Present program briefings to visitors	100
D226	Draft or write inputs for technical publications, such as magazines, reports, or bulletins	100
D229	Draft or write scientific or professional papers	100
M882	Conduct project kick-off meetings	100
A48	Draft or write point, position, or talking papers	100
M905	Evaluate bidder responses to Commerce Business Daily (CBD) announcements	100

TABLE X
RESEARCH AND DEVELOPMENT PROJECT MANAGEMENT JOB
(STG82)

<u>TYPICAL TASKS</u>	<u>PMP</u>
K757 Analyze research data	100
K820 Translate technical reports of research products into recommendations for application	100
D259 Research reference materials or technical publications	100
D258 Read technical publications, such as regulations, standards, or reports	100
M941 Prepare technical investment plans (TIPs)	100
M934 Prepare program schedules	100
K815 Review DD Forms 1498	100
K778 Determine research and development technical requirements	80
D248 Plan meetings, conferences, or working groups, such as agendas, invitations, or follow up actions	80
K777 Determine future AF environmental research and development requirements	80
M911 Evaluate results of contractor's systems operation pilot tests	80
K790 Identify shortfalls of available systems, equipment, or techniques for meeting future mission needs	80
K797 Perform advanced technology development planning and analyses	80
K791 Identify technical solutions to support user requirements	80
M945 Review contract deliverables or informal technical information reports	80
K814 Present research findings at meetings	80
D246 Participate in professional meetings or conferences	80
K758 Analyze results of research	80
M907 Evaluate contractor's design proposals	80
D227 Draft or write memoranda for record (MFR)	80
M926 Prepare cost estimates for projects or programs	80
M935 Prepare purchase request packages	80
K768 Conduct research plans meetings	80
C171 Develop budgets or budget estimates	80
K796 Perform advanced technology development demonstrations or studies in-house	80
M877 Approve or disapprove statement of work (SOWs)	80
M885 Coordinate project details with principle contracting officer (PCO)	80
D224 Draft or write articles for professional journals	80
M929 Prepare documents to transfer funds from other government agencies, such as AF Forms 616 (Fund Cite Authorization)	80
M942 Prepare written information for PCOs	80
M912 Evaluate unsolicited proposals	80
D261 Review draft articles for professional journals	80

TABLE X (CONTINUED)

RESEARCH AND DEVELOPMENT PROJECT MANAGEMENT JOB
(STG82)

<u>TYPICAL TASKS</u>	<u>PMP</u>
M881 Conduct field performance reviews	80
K759 Annotate or complete DD Forms 1498 (Research and Technology Work Unit Summary)	80
L837 Develop information, processes, and tools to support acquisition management	60
D231 Draft or write trip reports	60
M916 Participate in acquisition management reviews	60
M946 Review contractor's final report packages	40
L842 Evaluate design of developmental systems	40
L841 Evaluate alternatives to hazardous materials	40
L847 Identify design or conceptual changes to minimize use of hazardous materials	40

TABLE XII

MAJCOM/STAFF OFFICER JOB
(STG65)

# OF PEOPLE IN GROUP: 6	% ASSIGNED CONUS: 83%
% OF TOTAL SAMPLE: 3%	MAJCOM: 33% HQ USAF, 17% USAF, 17%
PACAF,	17% MAC, 17% ANG

AVERAGE TAFMS: 274 months	AVERAGE # OF TASKS: 120
AVERAGE TIUF: 236 months	AVERAGE # PERSONS SUPERVISE: 0
AVERAGE PAYGRADE: O-5	

FUNCTIONAL AREA: Operational Policies
Environmental Protection Programs
Administration Functions

COMPUTER PROGRAMS USED: ASIMS BEEKEEPER
HMIS

SUPPORT EQUIPMENT USED: N/A

TOP DUTIES

45%	A	COMMAND AND MANAGEMENT
25%	D	GENERAL ADMINISTRATION
7%	C	RESOURCE MANAGEMENT
5%	E	INSPECTION AND EVALUATION

<u>TYPICAL TASKS</u>		<u>PMP</u>
A2	Advise commanders or staff agency personnel on matters, such as capabilities, procedures, or programs	100
D251	Prepare informal briefings	100
D225	Draft or write correspondence, such as letters or messages for electrical transmissions	100
D250	Prepare formal briefings	100
D254	Present informal briefings	100
A3	Advise subordinate units on changes to regulations, manuals, or supplements	100
D257	Read current periodicals and journals relating to field of work	100
A66	Evaluate USAF publications	100
D246	Participate in professional meetings or conferences	100
D227	Draft or write memoranda for record (MFR)	100

TABLE XII (CONTINUED)

MAJCOM/STAFF OFFICER JOB
(STG65)

<u>TYPICAL TASKS</u>	<u>PMP</u>
D253 Present formal briefings	100
A70 Interpret regulations, manuals, supplements, or procedures	100
A58 Evaluate field reviews of changes to publications	100
A57 Evaluate effects of funding cuts on programs	100
A64 Evaluate suggestions (AF Form 1000)	100
A63 Evaluate requests for waivers to regulations, manuals, or supplements	100
A85 Present program briefings to visitors	100
J720 Advise base BEEs on industrial hygiene matters	83
A72 Monitor suspenses	83
J722 Advise base Bioenvironmental Engineers (BEEs) on environmental protection matters	83
D258 Read technical publications, such as regulations, standards, or reports	83
D220 Determine priority and disposition of correspondence or messages	83
D259 Research reference materials or technical publications	83
D262 Review inputs for technical publications, such as regulations, standards, or reports	83
A92 Revise or edit directives, such as manuals, regulations, supplements, or other publications	83
A60 Evaluate inputs to MOUs or MOAs	83
A90 Review responses to congressional inquiries	83
A52 Draft or write responses to regulatory agencies regarding environmental health issues	83
A78 Participate in environmental protection committee meetings	83
J721 Advise base BEEs on radiation matters	66
A46 Draft or write input to congressional testimonies	66